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Biological & Medical Serials

CANADA

MEDICAL AND SURGICAL JOURNAL

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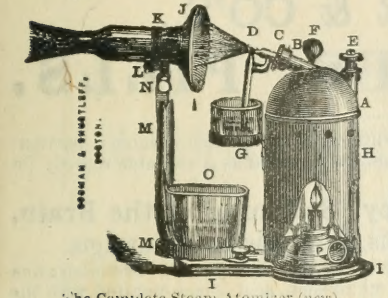

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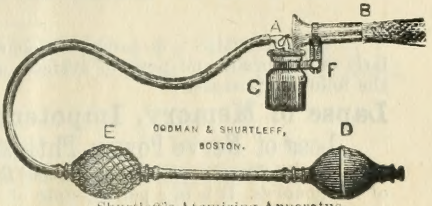

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CANADA
MEDICAL & SURGICAL JOURNAL.

ORIGINAL COMMUNICATIONS.

Case of Leucocythæmia,—History and Autopsy. By JOHN BELL, A.M., M.D.

(Read before the Medico-Chirurgical Society.)

Amongst the patients, at the Montreal Dispensary, when I commenced attending for the quarter beginning April, 1875, was Henry G., a French Canadian, 56 years of age, who was, and had been suffering from ascites and dropsy of the legs and feet. His illness, I believe, commenced about a year previously. His hair and eyes were brown and his complexion, which had been of the brunette type common to his race, was pale and sallow. His face was thin, and wore a sad and distressed expression which did but little justice to his contented and happy disposition. His body was throughout much attenuated, and contrasted strongly with the round distended belly. After talking for a very short time he was oppressed with want of breath. I examined him only in the erect posture, and discovered what seemed to be a hard nodular deposit on the inside of the abdominal wall, most distinctly felt in the left inguinal region, extending downwards to the crest of the pelvis. From his wasted cachectic appearance, and influenced by the fact that râles were heard throughout the lungs, I thought that he was suffering from tubercular or cancerous infiltration of the peritoneum, and prescribed a pectoral mixture and Iron tonic. There was no pain in the belly, or distress except what arose from the pressure of the fluid on the

stomach and diaphragm. In a short time the lungs cleared up but the condition of the belly remained as formerly. His bowels were sometimes constipated, at other times loose but generally free. The treatment by diuretics, with iron and hydragogue cathartics, was now directed to relieve the discomfort caused by the accumulation of fluid in the peritoneal sac, but with little permanent success.

About the middle of May he sent for me to see him at his own home. He was lying down, and on putting my hand on his belly the nature of the tumour was solved—it was now an enormously enlarged spleen—the notched and somewhat nodulated end and edge of which had been already felt. The liver seemed to be but little if at all enlarged as the edge of it corresponded with that of the ribs—the organ being pushed up into the dome of the diaphragm and overlapped by the resonant lung. There was no enlargement of the external lymphatic glands, but there were cicatricial marks on the neck beneath the left ear. The superficial veins of the abdomen and front of the chest were enlarged and formed anastomoses by vessels of large *calibre.* A fringe of small veins, such as I have seen in cases of hepatic obstruction sprang into view at the edge of the ribs and extend about an inch upwards.

He had lived in the S. W. States about fifteen years ago and in coming to Montreal had been detained a short time at Whitehall on Lake Champlain, where he was seized with intermittent fever, from which, however, he soon and permanently recovered after reaching Montreal. Here, in passing, I may observe that Niemeyer states that "no connection has been proved between this disease (Leucocythæmia,) and malarial infection, or scrofula."

A nourishing diet, quinine and iron, in various forms were now prescribed with the application of the Biniodide of Mercury ointment externally. Under this treatment he rapidly improved; he grew stronger, the ascites and splenic tumour diminished so that he was able to walk a mile down town to his work—that of a saddler. He shortly after this

went to the country, taking with him a supply of medicine, which, by the way, he never used, as he found himself so well—and I lost sight of him until the beginning of November.

I had never read of a case of Leucocythæmia having occurred in Canada, nor was I aware that this rare form of disease had as yet found a victim in this colony.

On the 15th December, at Dr. Howard's suggestion, I examined the freshly drawn blood under the microscope, and found almost the whole field filled with white blood corpuscles, *apparently* considerably smaller (one third, perhaps), than the red. The white corpuscles *appeared* to be several times more numerous than the red ones, but I could not at the time attempt to count the number of each in any area, and would not now like to hazard a guess as to their relative proportion. Niemeyer says, "while, in normal blood, there are 350 red blood corpuscles to one white one, in Leukæmia (as the Germans, after Virchow, and imperfectly, according to Bennett, delight to name this disease J. B.)—the number of white corpuscles may become so much increased, and that of the red ones so much diminished, that the former will become a sixth or even half as many as the latter. In the *splenic* form of the disease the white blood corpuscles are not distinguishable from those of normal blood; they are distinct, well-developed cells. In the *lymphatic* form, on the other hand, Virchow and other observers, found numerous free nuclei and small cells, both of which correspond exactly with the elements found in the lymphatic glands.

In the beginning of November I saw this patient again, and found him very much the same as when he first came under my observation, but now suffering from diarrhœa, as well as bronchitis. The latter was soon relieved, but the former persisted almost continuously until his death. Iodide of Potash and Quinine were now used with iron, and occasionally Digitalis, Squills and Colchicum, as diuretics. As a *dernier resort*, Warner's Pills of Phos-

phorus were tried but with no avail, as the weakness and the œdema of the legs increased — the skin becoming cracked and irritated, and finally the whole body became anasarcous. There was no albumen in his urine. He was slightly delirious the night before his death which took place on the 14th of January, 1876.

Autopsy—thirty-six hours after death :—

The whole surface was pale. The legs were swollen, and the abdomen distended with effused serum. A few small ecchymoses were found on the backs of the hands. *Rigor mortis* slight. In making the *sectio-cadaveris* the muscles were seen to be pale in colour, and no trace of adiposé tissue could be found. The cartilages of the ribs were yellowish and fatty in appearance. About two gallons of dark greenish fluid was removed from the abdomen. Old adhesions united the right lung to the pleura, but otherwise this and the left lung were healthy. White patches and lines along the prominent veins marked the areas of attrition between the most prominent parts of the heart and pericardium. The heart itself showed no peculiarity, but on severing the large vessels coagula slipped out composed in distinct parts, of dark red clots, greenish-yellow, semi-purulent masses and smaller pieces of translucent fibrin. The right side of the heart was full of these, and they extended up into the pulmonary artery and its larger divisons.

The omentum, and peritoneum generally were found thickened, firm and sodden. The omentum had become attached in many points to the surrounding organs. Especially noticeable were two thickened bands, carrying large veins, that were attached to the abdominal walls at the edge of the ribs in front. The parietal attachment of the right band corresponded with the position of the fringe of vessels seen on the cutaneous surface and referred to already. In the thickened wall of the intestine the peritoneum in many places presented small depressions, about the size of a half

a grain of pepper, that looked like cicatrices, but no corresponding mark could be found on the mucous surface.

The greatly enlarged spleen, firm and mottled all over with whitish spots, occupied a large part of the left side of the abdominal cavity. It was tolerably regular in form, elongated like an almond, and presented the usual notch in its anterior edge, together with several smaller sinuosities towards its lower ends. It measured about 13 inches in length, 6½ inches in breadth, 17 inches in circumference horizontally at the middle of the periphery, and weighed — lbs — oz. The veins and splenic artery were proportionally increased in calibre. Dr. Osler has kindly examined the minute structure of the spleen as well as that of the other organs and tissues, and I believe has prepared a paper and microscopic sections, embodying and illustrating his observations.

The liver was considerably enlarged, and its cut surface was glistening and smooth, and of a greyer colour than normal. There was no means of weighing it. The kidneys were about normal, &c., in size and appearance, with the exception of being flattened out from pressure, the left one in particular being very much expanded. Some parts of the cortical substance were paler than others.

Some of the mesenteric glands were a little enlarged. Several of the retro-peritoneal glands were also increased in size and slipped readily from their investing tissues. They seemed to have a white watery appearance and be more friable than usual. The brain was not examined.

1, Beaver Hall Terrace,
Jan. 26th, 1876.

Remarks on the Histology of the above case. By WILLIAM OSLER, M.D., L.R.C.P., London. Professor of Institutes of Medicine, McGill University.

Beginning the description with the blood—the tissue most remarkably altered in this disease—it may be noticed in the first place, even with the unaided vision, a peculiar creamy

look in the slides prepared for examination. This is very characteristic, and when seen in blood taken from an adult is in itself evidence of an excess of colourless elements. In sucklings the same appearance is seen after feeding from excess of fatty matter in the blood. In a specimen sent me for examination some time before the death of the individual the colourless corpuscles numbered at least one-third of those in the slide; the majority of them in appearance resembled the ordinary colourless elements, many, however, were smaller, others a little more granular than usual. One feature, not at all usual in ordinary corpuscles, was the presence in most of a single, clear, vesicular nucleus. Blood taken from the heart and splenic vein after death presented very much the same characteristics; the colourless corpuscles from the latter situation varying greatly in size. The general experience in Leukæmia is that the colourless elements of the blood are somewhat larger than in health. No such conclusion can be drawn from this case as was evident by an examination and comparison of sketches of two sets of healthy and leukæmic corpuscles, drawn to scale. Though some of the latter were larger than normal, others again were much smaller, and the average size in the two sets was very nearly the same. Apart from the increase in number, the presence of a single vesicular nucleus in most of the corpuscles was their most striking feature, and one not common in either leukæmic or healthy blood. When first examined a nucleus may not be seen in normal corpuscles, but after a time, especially if reagents—acetic acid—be added, two or three may develop, and the same number is spoken of as occurring in the colourless corpuscles of leukæmic blood.

Peculiar crystalline bodies, which will be referred to hereafter, were found in the blood of the specimen first given me, and also in the blood from the splenic vein and heart.

An unusual tendency to crystallize, not often met with in human blood, existed, and from the specimen examined during the life of the patient the Hæmoglobin separated

out in small square tablets and in long rectangular prisms. In a slide of blood from the heart, which was surrounded with oil and laid aside for a week, some enormous tablets and prisms crystallized out.

In the heart were several large clots of a peculiar greenish-yellow colour, like masses of semi-solidified pus. Some of these were seated on dark grumous bases, others were uniform throughout, while one was capped with a layer of transparent gelatinous fibrin infiltrated with serum. On examination the greenish coagula proved to be collections of leucocytes entangled in the meshes of the coagulated fibrin ; while, after hardening, the cut sections presented a remarkable similarity to lymphoid or adenoid tissue, consisting of a reticulated network, in the interspaces of which the cells were enclosed. One or two decolourized clots were met with in the splenic vein.

Spleen—Teased portions showed numerous small corpuscles, very like those met with in the pulp of healthy organs, together with other larger cells, leucocytes, in tolerable abundance. Nucleated fibre cells existed in great numbers, constituting in many specimens the majority of the formed elements. Normally these occur about the smaller vessels and in the connective-tissue framework of the organ, but not in the proportion found in this case. Red blood corpuscles and much fibrous tissue were also present. No traces of the Malpighian corpuscles remained. Sections taken from different localities demonstrate that the chief change in the organ had occurred in fibrous, elements which were everywhere enormously hypertrophied, being both relatively and absolutely increased. Thin sections of a healthy organ, (such as you see under one of the microscopes,) show little else than a dense aggregation of small round spleen corpuscles, and it is only at the thinnest portions, and with high powers, that the delicate fibrous stroma of the pulp can be detected. In this case exactly the reverse holds good. Not only the coarse bands which, as in the normal organ, dip into the substance

are hypertrophied, but also the excessively fine adenoid network forming the matrix of the pulp ; so that with a low power we see a tissue composed apparently of nothing but fibres crossing each other in all directions, and having little, if any, resemblance to the structure of the healthy organ. From the remarkably irregular course of the fibres and their arrangement, a peculiar appearance is given to the sections which will be best understood by an examination of the specimens. Light and dark columns of fibrous tissue are seen crossing each other in every direction, four or five often radiating from one point, corresponding generally to a transversely cut splenic vessel. Thin sections highly magnified further show the extent of development of the fibrous tissue, and the relation of the cells to the reticular network, explaining, moreover, the light and dark areas which give such an extraordinary appearance to the specimens when examined under a low power. Extending from the larger trabeculæ coarse and fine fibres proceed which uniting enclose rounded or irregular-shaped areas, and from these others originate forming similar spaces. The nodal point of these fibres is usually somewhat triangular in shape, and a small nucleus is not unfrequently seen, so that in places they are or appear to be formed by the union of the processes of stellate fibre cells. Such an arrangement, I may remind you, constitutes the stroma or fibrous matrix of all lymphatic structures, and is known as an adenoid tissue. Normally it occurs also in the spleen pulp, enclosing the cells in an exceedingly delicate reticular network very difficult to make out. In this case the delicate stroma is greatly hypertrophied, and constitutes with the coarse bands dipping in from the capsule the bulk of the organ. The relation which the cells bear to the stroma is very easily made out, the latter simply encloses them in its meshes, and according to the width of these one,two, or more cells are included. In most instances the meshes are so small that only a single corpuscle is enclosed, which appears, moreover, closely embraced by the fibrous net. In other instances two or more corpuscles may be counted in a single areola.

The dark and light columns referred to above are found to depend on the presence or absence of corpuscles in the meshes ; in the former case they are retained, hence the darker appearance ; in the latter they are absent, and in consequence these columns look much lighter. A precisely similar structure is met with in the lymphatic glands, in which the light areas constitute the lymph paths, while the dark columns, termed the follicular cords, are filled with the lymph cells imbedded in an adenoid matrix. The lymphatic vessels after penetrating the glands ultimately open into the lymph paths, or clear columns, and the lymph in passing through disengages or washes away the corpucles from the contiguous follicular cords or dark columns.

Substituting in the spleen the blood-vessels for lymphatics, there is a remarkable similarity—not only in general structure, but in the relation of the blood current to the cells and fibrous network—between this organ and an ordinary lymphatic gland ; so much so that Frey, Müller, and others describe it as a blood-lymph gland. According to their description the "blood from the arterial capillaries is emptied into a system of intermediate passages, which are directly bounded by the cells and fibres of the network of the pulp, from which the smallest venous radicles take their origin." The colourless corpuscles are supposed to develop from the cells of the pulp, and are washed out by the constant current of blood passing through the organ. Hence the increased number of these elements met with in the blood of the splenic vein. Some even believe that these colourless elements may while still within the spleen pulp develop into coloured corpuscles, but of such a process we have no definite knowledge. This being the case, it would appear easy to explain the etiology of this disease : hypertrophy of the organ, increase of the cellular elements, more rapid formation of colourless corpuscles, and conduction of these into the circulation by the blood current would be steps in the process. Unfortunately, there are insupera-

ble difficulties in the way of any such explanation. We know of half-a-dozen hypertrophies of the spleen—more genuine hypertrophies too than are met with in Leukæmia —in which the normal proportion between the elements is maintained, yet wholly unaccompanied by any increase in the cellular elements of the blood. To say that in the simple hypertrophies there is retention of formed elements, while in Leukæmia there is a rapid increase, and as rapid separation of colourless elements, incapable of developing into red blood corpuscles, is simply to admit our ignorance of the intimate pathology of this obscure affection.

Again, there is a disease Anæmia lymphatica, or Hodgkin's Disease, characterized by enlargement of the lymphatic glands of the body, generally without any accompanying hypertrophy of the spleen, and without any increase in the colourless elements of the blood; and yet this is equally pernicious and runs a like fatal course. Further, there is a variety of Leukæmia, excessively rare indeed, marked by hypertrophy of the lymphatic glands all over the body without corresponding enlargement of the spleen. I mention these affections, so like in some respects, so unlike in others, just to illustrate the difficulties in the way of establishing a correct pathology of lymphatic disorders.

Passing to the consideration of the liver we meet with changes equally remarkable. On section of the organ, and also through the capsule, irregularly scattered areas of a white or yellowish white appearance were seen, nowhere, distinctly isolated, but merging into the surrounded liver substance. Portions taken from these areas and teased in saline solution presented a great accumulation of round colourless corpuscles, ordinary lencocytes, very similar to those met with in the blood, many of them with the same clear vesicular nuclei. They presented considerable variations in size. The proportion of these corpuscles differed according to the locality from which the peice was taken; from the central portions of some of the larger

white patches they formed almost the only elements in the field, in others the liver cells were present in abundance mingled with the former. Irregular cells filled with yellow granules constituted the sole remains of liver structure in some places, while in others the cells were not so much degenerated, but a little irregular from pressure. Many possessed double nuclei. Some irregular shaped connective tissue corpuscles were found in these specimens. In the more natural looking liver areas the cells were found in a healthy condition, not at all fatty, and with very little granular matter. In these portions leucocytes were also found but in greatly diminished numbers.

Cut sections (made after hardening the organ in Müller's fluid and alcohol) are exceedingly instructive with regard to the distribution of the leucocytes. Thin sections of healthy uninjected liver, when cut transversely to the central veins of the lobules, show elongated cords or columns of hepatic cells converging towards the openings of the central veins, with very little intervening space between contiguous columns. Similarly in a section parallel to the central vein these columns appear cut across and are seen to unite with neighbouring columns, small empty spaces representing the position occupied by the vessels, existing between them. In this leukæmic liver an extensive infiltration of leucocytes existed between the columns of liver cells, and formed the essence of the disease in the organ. In some situations they were few in number and the surrounding liver substance was little effected, in others wide areas filled with them were seen between thin atrophied cords of hepatic cells. A still further change was seen in many places ; atrophied remnants of liver cells occurred interspersed in a tissue made up of leucocytes, surrounded by a finely granular or fibrillar matrix. Indeed, so closely were the leucocytes set together, and so scanty the remnants of liver substance, that in spots it looked like a tissue infiltrated by a malignant growth—a small cell Sarcoma. Of all organs the liver is the most frequently

affected by leukæmic growths, and occasionally is found much more diseased than the spleen. The leucocytes filling the spaces between the columns of liver cells are usually regarded as white corpuscles which have wandered from the blood-vessels, and certainly the conditions in the liver are most favorable to such a process. The blood in the portal veins has already traversed one set of capillaries and must circulate in the intralobular plexus under extremely low pressure. We know that the colourless elements of the blood have a great tendency to adhere to the sides of the vessels, especially under diminished blood pressure, and very readily migrate through. They are sticky adhesive bodies when in the vessels, and adhere to one another and to the walls with great pertinacity. That all the leucocytes in such a liver are to be regarded as vagrant white corpuscles may be doubted. It is much more probable that by a process of fission they have multiplied enormously in the leukamic tracts, causing atrophy of the liver substance. Indeed, these aggregations of leucocytes may themselves have been foci for the origin and development of others, which, passing into the blood current, served to augment the colourless elements.

Kidneys.—The portions of these organs removed for examination did not show any marked alteration in structure. Here and there groups of leucocytes were seen between the tubules, but the process was limited, and no extensive growths, as often met with, were found.

Lymphatic Glands.—These did not appear much, if at all, enlarged, and those removed (mesenteric and lumbar) did not give evidence of any hyperplasia of their cell-contents. The one which, so far, I have specially examined showed a great increase in the fibrous elements with a corresponding diminution in the cells.

Some remarkable crystalline bodies were found in the blood and liver, forming colourless spindle-shaped prisms, of very beautiful and regular shape, varying much in size. I can offer no explanation of their nature, not having had

time to test them properly. Many crystalline organic principles—Xanthin, Hypo-xanthin, Creatinin, and others—have been found in the blood and organs in this disease, but whether the ones here referred to have any connection with either of these I cannot say.

Case of Imperforate Rectum, Colotomy in the region of the Sigmoid Flexure—Recovery. By WILLIAM GARDNER, Professor of Medical Jurisprudence, McGill University.

On the 1st February of this year I was asked to see a male child, two weeks old, whose bowels I was informed had never been moved. On enquiry I found that the child had had several attacks of vomiting (on one occasion only, of stercoraceous character), but had not seemed to suffer much in other respects, and nursed fairly well. The skin was of a somewhat sallow or dirty hue and withered or shrivelled in appearance, the abdomen very much distended, and the superficial veins greatly enlarged, and distinctly visible through the integument. On examination the anus with sphincter and rectum to the extent of three quarters of an inch were found to be perfectly normal. To the examining finger the cul de sac felt puckered as if from a cicatrix; when the child strained, which the presence of the finger in the rectum seemed to induce it to do, a boggy semi-fluctuating sensation is perceptible.

Being by no means certain that a portion of the rectum was not absent, I did not dare to attempt to establish the natural passage, but concluded that the safer plan would be to open the bowel in the left groin, leaving the question as to the propriety of any attempts in that direction to be decided by the additional light which I expected would be thrown on the case by exploration from the artificial opening in the groin.

Consequently, on the following day and with the valuable assistance of my friend, Dr. Wilkins, I proceeded to perform the operation of colotomy, in or as near as might

be, the sigmoid flexure. The child having been chloroformed, I made an incision an inch and a half in length, extending in an oblique direction upwards and outwards from the middle line to a point about half an inch beyond the anterior superior spinous process of the ilium, dividing the skin, and cellular tissue or superficial fasciæ till I reached the muscles, which with the transversalis fascia, and peritoneum were successively divided on the director. The distended bowel lay immediately beneath ready to hand. The gut was transfixed by two curved parallel needles, half an inch apart, and each threaded with double ligatures of carbolized catgut, after which it was opened and the edges attached to those of the wound in the integument. A large quantity of meconium of a greyish-yellow colour was immediately voided. The substance of the coats of the bowel was found to be very easily lacerated as if softened, from the effects perhaps of previous inflammation from the distension. The operation, although tedious, was one which presented no very great difficulties in its performance. Some bleeding from the lower extremity of the wound was arrested without much difficulty. At no time after the operation had the child a single bad symptom but nursed and slept as if nothing had happened. The skin rapidly lost the dirty sallow hue it previously presented, and at the end of a fortnight the little fellow became quite plump and healthy-looking.

Repeated explorations of the bowel, first with elastic bougies, and subsequently with a whalebone probe, introduced through the opening in the groin, conjoined with the finger in the canal *cul de sac*, lead to the conclusion that the rectum is absent for a portion of its length, as the probe thus used cannot be made to pass downward for more than about three quarters of an inch, and cannot be felt by the finger. The most remarkable fact in the case, perhaps the only one excepting of course the success of an operation so frequently fatal, is that this child should have lived for a fortnight (as it did) previous to the operation, in a condition of compara-

tive comfort without evacuation of the bowels. Some difficulty has arisen from a strong tendency displayed by the opening in the groin to contract and to become almost closed. On one occasion on visiting the child, after an interval of ten days, I found the opening so much reduced in size as barely to admit an ordinary probe ; the abdomen was again distended, and the child restless and fretful. With the assistance of Dr. Wilkins, who gave chloroform, I proceeded to dilate the opening, first by gum elastic bougies, andsubsequently with a bivalve ear speculum provided with screw mechanism for separating the blades. I subsequently introduced a pair of dressing forceps into the opening and further dilated it by separating the blades. The child almost immediately passed a large quantity of fæcal matter, and rapidly resumed his wonted good-nature. I hope to be able to obviate this persistent tendency to the closure of the opening by means of a plug and shield of gutta-percha moulded to the parts.

525 St. Joseph St.

TRANSLATION.

Anomalies in the development of Vaccine Pustules.

Heller (Centralblatt f. d. Med. Wissen) records some interesting observations on this subject, in the revaccination of 700 young and active recruits. They may not prove uninteresting to the readers of this Journal at the present time when the question of the protective influence of vaccine is so engaging public attention.

1. *Single vaccination, unequal (as regards time) development of the pustules.* Four cases, of which the following is the best example, Heinzer, vaccinated on 13th November, with nine days old glycerine lymph from a child (1.5) six points. On 20th November, three well developed pustules ; on 28th November (15 days after), five well developed pustules, of which two had arisen within five days, the three old ones were beginning to dry up.

2—*First vaccination without effect, second effective with*

simultaneous development of pustules on the first points. Three cases. Rouby, vaccinated on 15th November with ten days old glycerine lymph, six points upon the right arm. On 20th November no trace of pustulation; vaccination repeated, six points on left arm. On 26th November two well developed pustules, of which one was on the last, the other on the first place of vaccination.

3.—*First effect incomplete, vaccination repeated, and now in both places development of mature pustules.* Three cases. Krûger, vaccinated on the right arm, six points, on 14th November. On 20th November, three indistinct pustules. Vaccination repeated on the left arm. On 26th November, four well developed pustules on the left arm and five on the right. Hiller concludes that failure or imperfect success of a single revaccination does not warrant the supposition that the individual is insusceptible to vaccination. He states as a remarkable fact that lymph which in forty persons proved effective, in ten others, vaccinated with equal care, was inoperative, whereas eight days later vaccination of these ten with another specimen of lymph was successful.

4.—*First vaccination successful, second, performed* 5-7 *days after, also successful.* The views of authors differ as to how many pustules are necessary in order to secure the desired protection. According to Eulenberg's collected experiences the question may be answered thus: *a few pustules may thoroughly fulfill the purpos , but the duration of the protection decreases as the number of pustules* (*under five*) *diminishes.* This corresponds with the idea, tolerably wide spread in the army, that less than three marks does not afford adequate protection, and consequently revaccination is indicated. In 27 cases in which within the first week after vaccination, 1–3 typical pustules had developed. Dr. Hiller repeated the vaccination upon the other arm, in ten on the 5th day, in seventeen on the 6th. Out of these twenty-seven recruits a second succsssful vaccination was

obtained in fourteen, six having four pustules and over, eight less than four. By way of comparison in twelve other individuals who had been successfully vaccinated, the process was repeated on the 15th and 16th days after, at a time when, of course, the first produced pustules had already dried. In not a single instance in these cases was the second attempt successful. These observations confirm those of Bryce in 1802, who states that even after the 6th day a repetition of the vaccination would produce fresh pustules. Sacco has shown by accurate experiments that the protective power of vaccination first supervenes between the 11th and 13th days, an experience fully borne out by clinical observations, as small-pox may come on during or immediately after a successful vaccination.

5.—*Development of pustules close to the vaccination spots.* Three cases. Westerfield, vaccinated on 13th November, with nine days old glycerine lymph on right arm, 6 points. On the 28th November, 7 well developed pustules, one of which was situated on the inner side of the arm, about $1\frac{1}{4}$ inches distant from the nearest pustules. In these cases the transference of the virus was probably effected by means of the finger nails. Two of them confessed to having scratched the spots in the night on account of the intolerable itching.

6.—*Successful vaccination upon Acne and Psoriasis spots.* John, vaccinated with ten days old glycerine lymph on right arm, six points. On 20th November no effect visible. Vaccination repeated with lymph from the arm of an infant; four points on the left arm, and four points in Acne pustules, which were abundant on the shoulders and back. On the 26th November two mature pustules in acne spots on the shoulder. No change in the points on the arm. In another case vaccination at several points on Psoriasis spots developed into circumscribed papules with vesicular tops, while vaccination on the sound skin was twice unsuccessful.

7.—*Successful vaccination in the initial stage of Typhoid fever.* Dr. L. vaccinated on 24th April, eight points on right arm. Three days after he complained of headache, weakness, and shiverings, which proved to be only the initial symptoms of an attack of Typhoid fever with which he was laid up for between four and five weeks. By the 5th May four of the vaccination points had developed into mature pustules. W. O.

WERHNER ; *Enormous Air-Tumour*, arising from spontaneous Dehiscence of the Mastoid cells. Cure after four years duration. (Deutsch, Zeitschr, f. Chir. III., quoted in Centralblatt f. d. Med. Wissen.)

Case.—After a violent fit of sneezing, four years ago, a tumour about the size of a pigeon's egg formed without pain over the right mastoid process of a weaver aged twenty years. Pressure caused the tumour momentarily to disappear, but it returned immediately with expiration. After it had grown to the size of the fist it could only be diminished by pressure, but no more entirely removed. On examination the tumour was found to extend over the whole right half of the head, it was flat with a broad base, the upper surface uneven and rough, and divided into three large rounded knobs, the most prominent of which lay over the back of the head and a less prominent one covered the crown. The skin over the tumour was separated, from the bone by a distance of $1\frac{1}{2}''$–$2''$; otherwise the skin was normal. The tumour was entirely painless on pressure which drove the contents to all sides. The mastoid process perceptibly divided its whole length. Percussion clear in every part. On putting the ear down to the tumour and compressing it, we hear a bellows murmur (Blasenbalgeräusch), but no emphysematous crepitation ; swelling and tenseness of the tumour increased by sneezing and the "Valsalva method." Slow and scarcely perceptible compression of the tumour causes the patient to feel a sensation of air in the throat, which is discharged with repeated difficulty of respiration. *No visible change in the ear.* Acuteness of hearing somewhat diminished on the affected side, relieved by a compress and bandage, this is without lasting effect. Closer examination confirmed what is above stated. During the pressing back of the air there are frequent eructations of gas but no difficulty of respiration. On the 12th day, compression after the previous removal of air by an exploring needle had no result. After this by the production

of adhesive inflammation, the opening of communication was endeavored to be closed. A ring was placed on the division in the mastoid process, and pressure made on it by the finger, whereby a portion of the tumour was isolated completely, and into this isolated portion, Iodine was injected. The three first injections only caused lessening of the tumour. The last injection was made into the highest part of the tumour directly over the crown and caused complete cure of that part of the tumour which still contained air and was supported by compress and bandages.

E. GUIBOUT, *Malignant Galloping Syphilis.* (Union Med., 1875, quoted in Centralblatt f. de Med. Wissen.)

Guibout describes two cases of Syphilitic Rupia which were accompanied with general cachexia. The patients had high fever with sleeplessness and were confined to bed. Both cases (a man and a girl, aged from 25 to 30), had four weeks previously primary sores. Malignant syphilis may be either a primary or a secondary affection. The first case had genuine symptons of general syphilis without any antecedent eruption. In the second case it appeared suddenly as distinct general disturbance after the various normal eruptions. In both cases the causes were, absence of treatment, bad hygienic conditions and impairment of the general health through excess, want and fatigue.

In the foregoing cases, we may accept the above reasons for the girl who, besides having the first appearances of syphilis, had had a phagedenic chancre. The young man had been previously very robust, and had been treated *lege artis*. In this case there must be supposed to be either a special idiosyncrasy or that an abnormal quantity (?) of the syphilitic virus had been received.

The diagnosis in all cases is a serious matter, itself a 'quoad vitam.' The treatment must be a very cautious

one, mercury and iodine being contra-indicated on account of the general weakness and fever. First of all fresh air, aromatic baths, oysters, wine, meats, &c., are indicated, also strychnine before meals As soon as the strength is increased and the fever diminished, give five deci-grammes of Potass Iod, at first once a day, then twice, then three times; then use mercury by inunction and sulphur baths, or Hydrarg Iod. gr. 1-20 once a day. Both cases were cured in two months by this treatment. F. S.

Hospital Reports.

MEDICAL AND SURGICAL CASES OCCURRING IN THE PRACTICE OF THE MONTREAL GENERAL HOSPITAL

Case of severe injury to fore-arm. Under care of DR. ROSS. Reported by J. D. CLINE, Assistant House Surgeon, Montreal General Hospital.

John Ashcroft, a printer's boy, was admitted into hospital on the 24th of November, 1875. He was engaged in keeping the large stone of a lithographic machine clean with a large sponge when the sponge was caught in the roller and dragged his right arm in with it. The injuries were as follows; There was a compound dislocation forward of the lower end of the radius, the wound being transversely across the front of the joint down to the tendons; a compound dislocation between the two phalanges of the thumb, the end of the lower phalanx protruding through the wound, and a simple fracture of the ulna about three inches below the olecranon. The ends of the middle and ring fingers were very much crushed, and the whole hand badly bruised. The circulation was good in the hand. The vessels at the wrist had escaped. On admission the ends of the crushed fingers were amputated up to the first joints, and the dislocations reduced. All the wounds were sewed up, and the arm was put up on a rectangular splint on its posterior aspect with a straight anterior splint to within a couple

of inches of the wound at the wrist; and a gutta percha splint was moulded to the back of the wrist and bound so as to bring together the edges of the gaping wound at the wrist.

Ice water was applied to the whole wrist and hand by irrigation. The boy was tall for his age, of a thin skin and fair transparent complexion, and evidently of a constitution very much disposed to inflammation. The constitutional disturbance was very great. The temperature was 101°. the morning after the accident, and on the next morning, 104°. He got a mixture of Potass. Nit., and Tr. Aconit.

Dec 3rd.—Temperature down to 99°. Flaps of amputated fingers sloughed, and a large slough formed over seat of dislocation in thumb. Splint removed for first time. Found several superficial sloughs on back of hand, and abscess at back of wrist-joint, which was opened, and discharged a quantity of pus. It extended between the bones and into the joint. Was put upon Tr. Fer. Muriat m v, three times a day. General condition very good, so far, but from state of wrist-joint the advisability of amputation of arm was entertained.

Dec. 6th.—Consultation of the hospital medical staff being held, it was decided not to amputate but to trust to nature for a successful issue. He continued in good condition, temperature not running higher than 100°, till the 14th when a sharp attack of erysipelas set in. At 3.30 p.m. he had a severe rigor, during which his temperature was 103.5°. At 5.30 p.m., temperature was 106°, and pulse 144. He got a mixture containing Tr. Fer. Mur. m x, and Tr. Aconit m iij to the dose, which was to be taken every three hours, and a lotion of lead and opium was applied hot to the hand and arm. Up to this time the dressing had been carbolic lotion, 1 to 40. The hand became very much swollen; the granulations became glazed and swollen, and the discharge ceased from the sores, and altogether the arm presented a very unpromising appearance. On the 24th the erysipelas had subsided, the temperature was again

below 100°, and from this time the sores began to assume a healthy appearance. The second phalanges of the middle and ring fingers, which were quite loose, were now removed, the sores were dressed with 'red wash,' and the fingers strapped to reduce the swelling by pressure. The patient's general condition rapidly improved now, he was got out of bed, and the sores healed rapidly. At this time passive motion of the wrist, fingers and thumb was employed. It resulted, however, in very slight power of motion in the wrist and fingers, but very good in the thumb. He was discharged on the 7th February, 1876, with instructions to continue the passive motion. The result was certainly better than if an amputation had been performed. His hand at the time of his discharge was still swollen a good deal. He had very little power of flexion of the hand and fingers, with only the first phalanx of two of them left, but very good power of flexion in the thumb.

Case of Acute Rheumatism treated by Salicylic Acid.—Under care of Dr. FENWICK. Reported by J. D. CLINE, B.A., M.D.

Elizabeth Duncan, æt 18, was admitted into the hospital on the 28th February, with what promised to be a very sharp attack of Articular Rheumatism. Her temperature was 104°. There was a profuse acid perspiration; tongue very much coated, and both shoulders and one ankle were swollen and very tender. She was seen by Dr. Fenwick on the 29th, when he ordered her Salicylic acid grs. ii, every three hours, in capsules. Her temperature fell and tongue began to clean, but the joints remained very tender. On the 2nd March Dr. Fenwick ordered grs. v, every two hours. By the 5th of March all pain and swelling had left the joints, and on the 8th the patient was ordered clothes and full diet. Thus the patient was five days under treatment, during which time she took in all 272 grains of Salicylic Acid. It produced no irritability of the stomach or bowels.

Reviews and Notices of Books.

Vision, its Optical Defects, and the Adaptation of Spectacles. By S. C. FENNER, M.D., Louisville, Ky. With 74 Illustrations on wood.

In this work the author, without making any pretensions to originality endeavours to give, "in a concise and popular yet comprehensive form, a *résumé* of our present knowledge of Physiological Optics, and of the defects of the eye as an optical instrument," and since the great works of Helmholtz and Donders embrace nearly all at present known in this direction, it follows of necessity that they have supplied him with most of the facts contained in its three hundred pages. The value of a treatise of this kind depends chiefly upon the good judgment exercised in the choice and arrangement of material.

In this respect we think that Dr. Fenner is to be congratulated for his success, not only in having selected just the kind of information required by the practical Ophthalmologist, but also in the arrangement of the subject. The attentive reader will first become acquainted with the physical properties and phenomena of light, and the laws which have been deduced from observation of these phenomena. When these are thoroughly comprehended he will be prepared to enter upon the more complex subject of Physiological Optics. This part of the work cannot fail to be very acceptable to every student of ophthalmology who does not happen to possess a thorough knowledge of the German language; for the "Physiologische Optik" of Helmholtz has not been translated into English, and the Sydenham Society's translation of Donders on the Anomalies of Refraction, and Accommodation being difficult to obtain, there are no recent publications in the English language capable of supplying the wants of those who are not satisfied with the meagre way in which this division of the

science of ophthalmology is discussed in the ordinary treatises on diseases of the eye. Here we have the pith of all the progress made in physiological optics up to the present time, dressed in an easy and familiar style, so that nothing more than an elementary knowledge of mathematics is required, to render the subject comprehensible. The errors of refraction and defects of accommodation are treated of in the third part of the work, and whilst avoiding unnecessary minutiæ, the author has fully made good his intention of giving a concise, thorgh complete account of this interesting and important branch of Ophthalmics. We can heartily recommend an attentive perusal of this chapter to all medical men, with the assurance that it will be the means of avoiding many grievous errors in diagnosis, and of affording relief to the suffering of thousands who are tortured with the dread of impending blindness, when in reality nothing but simple mechanical appliances are necessary to render vision perfect. To make this statement carry conviction with it we cannot do better than quote *verbatim* some of Dr. Fenner's remarks on hypermetropia:

"Many ambitious young men, with a fondness for study and high aspirations for professional distinction, have had their hopes nipped in the bud by increasing difficulties of continued near vision in reading, writing &c., and although they found relief from positive glasses, have been advised by those in whom they confided, not to wear them, but rather to go the country and seek some occupation which calls for but little exercise of accommodation. There is scarcely a teacher in any of our schools who has not had one or more pupils who, after much study, particularly by artificial light, does not suffer from fatigue, with nervous and vascular irritation of the eyes, accompanied by headache, and whose annoying symptoms would subside if permitted to wear properly adjusted convex glasses; but, owing to want of knowledge on the part of their physician, they are doomed to a continuance of the sufferings and inconvenience of defective vision. The great frequency of such cases renders

it important that not only members of the medical profession, but educated persons, and particularly teachers, who can easily comprehend the subject of hypermetropia, should be, to some extent familiar with it, so that they may make due allowance for the complaints of their pupils, and, at the same time, by the proper diffusion of knowledge, overcome the prejudice so widely existing in the public mind against wearing convex glasses, even where their use is imperatively demanded in order to overcome some natural or acquired defect in the eyes."

Similar remarks will apply to asthenopia from any other remediable cause, particularly that which is caused by astigmatism.

The book, on the whole, gives evidence of having been carefully written, by a man who thoroughly understands his subject, and it is only seldom that criticism would be in place, perhaps nowhere more than in the remarks made on "myopia at a distance," in which the illustrative case shows nothing more than an ordinary case of myopia, as any emmetropic person possessing normal vision can prove by making himself myopic to the extent of an $\frac{1}{8}$, by placing a suitable convex lens before his eyes and trying the experiments mentioned. He will then find himself able to read Jæger No. 1, at 8″ to 16″ but barely able to make out Snellen xx, at three feet distance, although, notwithstanding the too great convexity of the lens, vision through a small opening in a piece of metal held in front of the same glass, = No. xx at 20 feet. In the appendix are found some simple rules for the choice of spectacles, for the benefit of spectacle dealers and their patrons, which it is hoped will be the means of avoiding mistakes commonly committed by those who have not given the subject of refraction special attention.

Periscopic Department.

SURGERY.

Extension of inflammation from the Epididymis to the Urethra.—By FURNEAUX JORDAN, F.R.C.S., Professor of Surgery at Queen's College; Surgeon to the Queen's Hospital, Birmingham; and Consulting Surgeon to the Women's West Bromwich Hospital.

Gentlemen,—I have had many opportunities of showing you cases of epididymitis following urethral disease. The disease is a common one, and its causes are many—almost too many to count. It would be easy to run over some half a hundred, and yet leave a few unmentioned. Urethral disease following and resulting from inflammation of the epididymis is, on the other hand, rare; it has few causes, and is not yet at all recognised.

I show you here a case of urethral discharge, which followed traumatic inflammation of the epididymis. This young man was in good general and genital health. He had never had gonorrhœa. His urethra, meatus, and prepuce were perfectly healthy when he came into the hospital. He received a violent kick on the left testis, and came in two days afterwards with some ecchymosis in the scrotum, and severe pain, tenderness, and swelling, which were clearly seated in the epididymis. On admission the cord was not thick, nor tender, nor painful. The day after admission, I myself found part of the cord greatly thickened—the thickened portion running up from the testis, and gradually subsiding just below the outer inguinal ring. The second day after admission, the swelling of the cord had passed into the canal, which was now full and tender. Two days later a urethral discharge, neither abundant nor scanty, and whiter than ordinary gonorrhœal fluid, made its appearance, and with it micturition became a little painful and a little more

frequent. This is the first case which I have been able to show you, and I have myself seen very few.

Recently I saw a case of epididymitis, also from injury, of much interest, and having a direct bearing on our subject. A gentleman, aged fifty, in fair health, came, in the dark, with his right testicle against a key in a door. Scrotal ecchymosis and considerable epididymitis followed. The cord became much enlarged, running like a rope up into the inguinal canal. Later, an abscess formed and broke at the front of the scrotum. Now, in this case, from first to last there was no urethral discharge. There was undoubtedly inflammation of the epididymis, and as undoubtedly the inflammation ran up the cord—probably to the urethra.

The question naturally suggests itself, albeit parenthetically: Why does inflammation of the mucous surface yield a muco-purulent discharge in one case and not in another? Why, in one case of inflammation of the bladder or bronchial tubes, is there abundant pus and mucus, and in another case little or none? I reply, We do not know. You frequently hear me use the expression, "We do not know." I think it better to say plainly we do not know than to cover our ignorance with sounding phrases. It may seem paradoxical to you, perhaps, but I often silently contemplate the benefits of a negative system of surgery—if we could get it: I mean a systematic review of what we do *not* know. The author would be a man of no ordinary courage; he ought to be a man of learning, experience, and judgment, equal to his courage.

The case I have just told you proves the conclusion I wish to bring before you—namely, that inflammation may run upwards from the epididymis—more forcibly, in one respect, than if a discharge had folllowed. You are aware that at the height of a consecutive epididymitis the urethral discharge often disappears, only to return a little later; but here it was clear we had no hypocrite trying to hide a clap, because there was at no time any clap to hide.

Touching the question of suppuration, I find with sur-

prise, that so careful an observer as Van Buren denies its occurrence in epididymitis. If there be an abscess, he infers that the body of the testis is inflamed. I believe that in this country surgeons are agreed that suppuration is not rare in the consecutive or other epididymitis of cahectic men.

Let me ask you now to look for a few moments at the causes of the inflammation of the epididymis and cord. Bear in mind that any inflammation of the prostratic urethra may extend along the cord to the epididymis. Now, an inflammation of the bladder of any kind, whatever its cause, under whatever circumstances it arises, may run forward to the prostatic urethra, and thence to the epididymis. Again, an inflammation of the anterior urethra of any kind however caused, arising under whatever circumstances, may run backwards to the prostatic urethra, and thence to the epididymis. Acute inflammation arising primarily in the epididymis has few causes: I can speak positively of one only,—injury. If the causes of primary epididymitis were more numerous, we should, I think, long ago have held urethral disease to be one of its results. Why injury sets up epididymitis mostly, and not orchitis, is no doubt for the same reason that inflammation of the cord and epididymitis so rarely reaches the testis—namely, that within the tunica albuginea there is no room for acute inflammation, for vascular changes, cell-proliferation, migration of cells, the general running riot of germinal matter, or other inflammatory phenomena.

If you accept the facts of the case before you and my reading of them, you will now and then be able to explain an otherwise obscure gleet. Moreover, you will not be compelled to affirm that in every case an epididymitis and a gleet together have necessarily a urethral, much less a sexual origin. The views before you may occasionally have (I speak from personal observation) important domestic or legal bearings.

The treatment I adopt here is that which I am in the

habit of adopting in inflammations; but which, seeing that it is exceptional, and strange to examining boards, I rarely take up your time in explaining. My creed is brief: I believe that the inflammatory process is much the same everywhere. I believe that the best remedies in one inflammation are the best in all. I believe that the best remedies are removal of cause (where it is removable), rest, adjacent and not too near counter-irritation, suitable pressure, elevation, and a few simpler matters. I therefore in each case try to find out the best way of using these remedies. In acute epididymitis I enjoin counter-irritation lightly over the scrotum, sharply in the groin and front of thigh; pressure, which begins as a delicate support, and goes on to actual compression; rest and elevation as far as they are practicable. The value of compression is well shown in the circumstance to which I drew your attention a moment ago—namely, the pressure upon the testis. If our bodies were mapped out into small areas, and each area were bounded by a firm capsule like the tunica albuginea, we should be free from the dangers of at least acute inflammation.—*Med. Times and Gazette.*

Extraction of a large foreign body from the Ear. By George P. Field, M.R.C.S., Aural Surgeon to St. Mary's Hospital.

M. Pratt, a little girl aged 6, came to the hospital with a black glass bead the size of a large pea in her left ear. She was sent on to see me by Mr. Lane. Previously, however, to her coming to the hospital, several attempts were made to extract the bead; but, unfortunately, the mischief was only increased, the bead having been pushed in still deeper, and firmly imbedded, the result of subsequent inflammation. I syringed gently, and postponed any further attempt at removal (as there was a good deal of inflammation) until my next hospital-day. She was, however, laid up with chicken-pox for two months; and, when she came again to the hospital (February 16th), all inflammatory signs had disap-

peared ; but the bead could easily be distinguished with the speculum, deeply seated and firmly fixed. She was put under chloroform, and an attempt made to remove it by means of glue attached to a piece of stick. This failed altogether. She was, therefore, placed on her side, with the affected ear downwards, and the syringe used from below ; and, after a little trouble, the bead dropped out. This is a case that one is likely to meet with every day. A great deal more harm than good is often done by the use of instruments ; but by the following method no injury can be caused. Place the patient under chloroform, with the ear affected downwards, and syringe from below. Pull the auricle backwards and upwards (by this means the external auditory canal is made into a straight tube), and apply the nozzle of the syringe to the upper wall of the passage. The water is then gently forced behind the obstruction ; the foreign body is loosened, and its own weight causes it to fall out of the ear. I have removed all kinds of substances in this way.

Practical remarks on Congenital Cataract. By GEORGE CRITCHETT, F.R.C.S., Senior Surgeon to the Royal London Ophthalmic Hospital ; Ophthalmic Surgeon to the Middlesex Hospital ; etc.

(Read before the Ophthalmic Section of the International Medical Congress in Brussels.)

I come now to the most important and interesting question connected with these cases, namely, that of treatment. It has been chiefly with a view of bringing certain questions to a definite issue, that I am induced to offer these observations to our meeting. We will now proceed to the consideration of certain alternatives which present themselves to the mind as measures to be adopted. We may first divide the cases into those which are brought before us at a comparatively early period, as between the ages of six and ten ; and those which come to us at or after the age of puberty. In children we may adopt various alternatives.

First, we may defer operative proceedings until the patient is able to decide the matter for him or herself. Secondly, we may operate on one eye, either by making an artificial pupil, or by removing the lens, by means of absorption or linear extraction ; or we may operate on both eyes. The method of making the artificial pupil also admits some modifications. It will be evident, therefore, that the case is not quite so simple as it might appear at first glance, but requires and deserves some careful consideration.

We will take the different questions *seriatim*, though to some they may possibly seem superflous and unduly analytical ; since the practice of the great majority of oculists is to subject such cases to the process of absorption, or more frequently to linear extraction—at least such a proceeding comes from time to time before my notice. It is this practice which I think deserves to be carefully reconsidered, and in many cases, if not in all, materially modified.

We will now briefly consider the various alternatives that we have set forth. Firstly : Do we meet with cases in children in which we are justified in postponing any operative proceeding ? If the vision be sufficiently good to allow the ordinary education to be carried on, and a fair amount of active exercise to be taken, I should prefer not to perform the major operation of absorbing or removing the lens, as it involves some absolute risk, and, if it succeed, requires the constant use of cataract glasses, which are a positive hindrance to a child ; but if it be a case in which there is such a well-defined, clear, broad margin as revealed by the use of atropine, that we have good reason to believe that a small artificial pupil would materially improve vision, should advise it to be made, because it is an operation with a minimum amount of risk, and because glasses are not required. In the second place, supposing the condition of the young patient, as regards vision, is such as to require operation, what method shall we adopt ? In all cases in which there is a clear margin representing one-third of the circumference of the lens, and where the vision is consider-

ably improved by the use of atropine, I should strongly advise the performance of a small artificial pupil in preference to the removal of the lens. It has the advantage that it is far safer, is much more quickly and easily performed, that it enables the patient to dispense with the use of glasses, that it in no way enfeebles the eye, nor does it prevent a subsequent removal of the cataract if altered conditions should render this expedient. When the transparent margin is somewhat narrow, the effect will be more doubtful. Our best guide in such cases is carefully to test the sight under the full influence of atropine ; and, if there be decided improvement, it may be confidently predicted that an artificial pupil will place the eye under still more favourable optical conditions. It is sometines very difficult to arrive at definite results in young children, and delay may thus be justified.

Secondly : Supposing an artificial pupil to be determined upon, what method shall we follow? The best optical results will be obtained by the performance of an iridodesis. It uncovers just sufficient space in the transparent part of the lens, and, at the same time, partially covers the semi-opaque portion. I have never met with any of the mischievous effects from this operation which have been assigned to it by others ; but as I can obtain nearly as favourable an optical result by another method, I have recently in most instances adopted it. I proceed as follows. I introduce a broad double-edged needle through the cornea near its margin, and just at the point which I intend should form the limit of my pupil. After withdrawing the needle, I introduce my small blunt hook, draw out the small portion of iris that intervenes between the edge of the pupil and the puncture in the cornea, and cut it off close ; then if gentle pressure be made on the surface of the cornea with the spoon of the curette, the iris detaches itself from the corneal puncture, and floats in the chamber, having had little more than a slit made in it ; indeed, it appears as if a small oval peice had been punched out of its pupillary edge

In seems to me that this operation is peculiarly well suited to accomplish its purpose. It forms a small limited pupil just in the right place, where there is little or no reaction, and it is as safe as any operation on the eye can be.

We may consider in the next place, those cases where the transparent margin is too narrow to admit any material benefit from an artificial pupil, and yet where the vision is so far impaired as to give strong indications for an operation. Under these circumstances, we have no alternative but to remove the lens either by absorption or by linear extraction, a method of proceeding to which many high authorities are in the habit of having recourse in the majority of these cases, not unfrequently on both eyes simultaneously, and in such skilful hands, with a large average of success. Nevertheless, my own experience and my observation of others have convinced me that it is an operation involving some risk, and one that I undertake with some anxiety. Formerly the method of operating for congenital cataract was by absorption, a process requiring several months for its completion ; more recently this has been replaced, in some measure, by linear extraction, further modified by suction. Each of these methods presents certain advantages and certain risks. The method for gradual absorption is the most simple and easy of performance, and in the end gives, perhaps the best result. The pupil being fully dilated, the capsule is fairly opened with a fine needle introduced through the cornea, so as to expose the lens substance to the solvent action of the aqueous humour ; the pupil is kept dilated ; and, at the end of six weeks or two months, if the opening in the capsule have closed, the same process may be repeated ; and when all the lens matter is absorbed, the capsule, if any opaque part remain in the field of vision, must be torn through. Should all progress favorably, a clear, round, moveable pupil remains, offering the best result that art can secure. The risks of the operation are, firstly, a sudden swelling of the lens from too rapid absorption of the aqueous humour in

its substance, giving rise to severe pain and to considerable hardness of the globe, a condition which may be best designated as acute traumatic glaucoma. Unless this symptom be speedily relieved, by performing iridectomy and allowing some of the lens matter to escape the eye is in imminent danger of being sacrificed, and even under the most favorable circumstances, only a partial success will be obtained; or, again, portions of lens matter may accumulate in the anterior chamber, or there may be a sudden displacement of one or more fragments, which by pressing upon and irritating the iris, may give rise to pain and inflammation, and threaten the success of the operation. With a view to relieve this condition, an effort must be made to extract the offending fragments. These various *contretemps* have led some oculists to adopt a different method of procedure : a plan known as linear extraction is substituted. It consists of two stages. In the first place, the cataract and its anterior capsule are freely broken up, and they are allowed a few days to become macerated and softened by the action of the aqueous humour. In the 2nd place, an opening is made in the cornea ; and then by means of a syringe suitably constructed, the soft matter is drawn or sucked out, so as, if possible, to remove every particle of the macerated lens. This operation has the advantage of rapidity, and in skilful hands often produces very excellent results ; but it is by no means free from risk, and seldom leaves the pupil round and free. On the whole, after having extensively tried both plans, and after having watched the results in the hands of others, I am disposed to revert to the old slow method, reserving linear extraction for those cases in which the fragments are setting up serious irritation, or for a few exceptional cases in which the saving of time may be a great object. as regards the treatment of the same group of cases in adults, similar methods must be adopted. At the same time it should be borne in mind that the operation of absorbing the cataract is beset with more risks than in children ; every possible care and precaution should, therefore, be taken.

In conclusion, I will state a few rules that I lay down for my own guidance in these cases, and that I venture to urge upon the attention of this meeting. In the first place, if the opacity be inconsiderable, and if the child be able to pursue his education, and compass the ordinary functions of life tolerably well, I do not urge operative interference, more especially where it would involve removal of the lens; but if a decided advantage could be obtained by making such an artificial pupil as I have described, it is so absolutely free from risk that I should advise it.

In the second place, I make it an invariable rule only to operate on one eye at a time, and for this I have more than one reason: the stake is too great to hazzard both eyes; then, a failure in one may assist us to pursue a safer, or, at any rate, a different method, if the patient or friends be willing to run the risk in the second eye; besides a failure of both eyes is such a fearful wreck— a catastrophe I have witnessed more than once, and hope never to see again. It has, moreover, occurred to me on three or four occasions in which I have operated with success upon one eye in intelligent adults, and have removed the cataract that, whilst they thankfully owned the great advantages gained by the operation, they have deliberately elected to retain the other eye in its defective state, affirming that it possessed certain qualities and advantages that were wanting in their renovated eye, and with which they were unwilling to part. As a final consideration, I may state that an eye from which the lens has been removed does not subsequently possess so good a life; it is more liable to undergo morbid changes and to perish after a lapse of years. Supported by these various considerations, I reiterate my opinion that there is a strong case in favour of operating on one eye only. Of course, if one eye succeed, there can be no objection to the subsequent performance of an operation on the other, if the state of the vision render it expedient.

In the next place, I always perform the small iridectomy already described in preference to removing the lens where-

ever the extent of the transparent margin offers a fair prospect of improved vision, even though the result obtained be not quite equal to that which might accrue from the removal of the lens; it is so much safer, and it further has the advantage, especially with the young, that cataract glasses are not required. I look upon the substitution of an artificial pupil in the treatment of these cases as a valuable march in the progress of our science. I have patients on whom this operation was performed years ago who are engaged in active professional duties, both in the church and in the law.

Lastly, in those instances where removal of the lens is indicated. I especially insist on the importance of only operating on one eye; then I prefer the slow method by absorption; and I urge the necessity of keeping a constant watch over the case until its termination, as acute symptoms may supervene at any moment, requiring immediate and active interference. I select the slow plan because I consider it safer, because the results as regards rotundity and mobility of the pupil are usually more completed, and because rapidity should scarcely be allowed to weigh in the choice of the method.

In dealing with these anxious and very responsible cases, whatever plan of procedure we elect, and however great the skill and exprience we may bring to bear upon them, we shall inevitably meet with occasional failure. This should make us most generous in our judgment of those who encounter similar misfortunes; and, when such a sad result happens in our own practice, it is no little consolation to reflect that no element of rashness was permitted to sway our better judgment, but that every precaution has been taken which human skill and prudence could suggest.—*British Medical Journal.*

MEDICINE.

Delusions of the Insane. By J. G. Thornly, M.D., Asst. Medical Officer Leicester County Asylum.

It is recorded by Esquirol that there was a female patient at Salpetriére who fancied that she had in her intestines

all the personages of the New Testament, and occasionally those of the whole Bible. When she died an examination revealed adhesions of the intestines to the peritoneum and to each other.

In this asylum there was a male patient who had been here for many years, and who for a considerable number of years past was in the habit of stating that there was a hundred-weight of iron in his abdomen ; he would occasionally put his hands to his abdomen, as if to support this weight of metal which he believed to be there, and it was impossible in any way to shake this rooted delusion. He was a strong and healthy man, and was in the habit of working daily on the farm as a labourer. This man suffered from melancholia. was often very reticent, and never communicative. Some time ago he was observed not to take his food so well as usual : he more frequently pressed his hands against his abdomen ; and when standing he leaned slightly forward ; but he never even once complained of pain or other uneasiness ; he was persuaded to go to bed. Afterwards the symptoms increased in severity : the abdomen became very tender on pressure, the appetite failed, the pulse became weak and thready. During the whole of his illness he was very silent and uncommunicative, so that no information could be obtained by asking him questions. He died a few days after taking to bed, and a post-mortem examination revealed a perforation of the intestine, near the junction of the ascending and tranverse colon, sufficiently large to admit the tip of the little finger. Through this opening some of the liquid fæces had passed into the peritoneal cavity. There were signs of inflammatory action in the neighbourhood of, and for some distance around, the aperture, but not to the extent which might have been expected.—*Medical Press and Circular.*

Nitrite of Amyl in Angina Pectoris and Heart disease.

Dr. Hamilton Osgood, of Philadelphia, in the *American Journal of Medical Sciences*, reports some cases treated by

nitrite of amyl. In one young woman he has used no other remedy than the nitrite of amyl, to the effect of which the patient is exceedingly sensitive, so that he only uses three-drop doses, and generally during the second inhalation the patient flings herself away from the handkerchief with a spasmodic shudder. By this time, however, she is invariably relieved. The effect of the remedy upon her is unusually profound. She remains in a semi-unconscious state from one to three minutes following the final inhalation. In another young lady who was attacked in church, he found her in a convulsive condition as to limbs and fingers, and unable to respond, being apparently unconscious to the sound of his voice. The right hand was occasionally clutched over her heart. There was a very small left radial pulse as compared with the right. He administered two drops, and with the first inhalation the patient, evidently startled, began to shriek wildly, in spite of which he continued the inhalation, and was rewarded by the return of her ability to speak. She felt relieved of pain, which had been "frightful." In another young lady five inhalations of one drop each relieved her not only of the paroxysm, but also of all traces of the pain to which she had for months been the victim. Heretofore unable to move quickly, to go up stairs, or drive without additional pain, she subsequently was and has ever since been able to take long walks, dance, run up stairs and ride on horseback without the slightest sensation of discomfort.

In these three patients the closest examination revealed no affection of the heart. But a case is given of organic disease which though fatal, shows the power of the remedy. (a female, aged fifty-seven years.) The patient, when seen by Dr. Osgood, was almost in a state of collapse; face livid; surface of the body bathed in perspiration; pulses small, especially the left radial. There was agonizing pain about the heart, extending to the occiput, left shoulder, and upper left arm; singultus, globus, great dyspnœa and difficulty of speech. The heart-sounds were weak, but normal.

The organ was acting irregularly. From five-drop doses the patient experienced immediate relief, and in the course of thirty minutes resumed an almost natural look, colour returning to the cheeks, breathing becoming much freer, and the ability to speak being restored. Attacks of lesser degree appeared during the next hour, which were not relieved by hypodermic injections of morphia and a variety of powerful stimulants. The patient was growing rapidly weaker from the effects of the first paroxysm. Unwilling to continue the use of nitrite of amyl, but nothing else giving the slightest relief, Dr. Osgood again administered it in smaller quantity. It quenched the pain and permitted the patient to assume a horizontal position. He then began to give her strong doses of brandy and aqua ammoniæ every quarter of an hour, but she gradually and quietly sank into a new collapse, which ended in death four hours after the first attack.

The autopsy revealed a heart well covered with fat; valves normal; slight atheroma of the aorta ascendens; right ventricle extremely thin and flabby: left ventricle in an apparently fair condition, but rather light in colour; papillary muscles shortened and thickened; liver markedly fatty. No other organs examined. The microscope showed that the muscular tissue of the heart was in a state of decided fatty degeneration. It is probable that this condition of the heart would be accused as the cause of the paroxysms by those who believe that angina pectoris *depends* upon a diseased state of the organ.—*The Doctor.*

MASSAGE AS A REMEDY IN SURGERY.

Massage or kneeding or champooing is regarded by Berghman as of the greatest benefit in joint affections. In traumatic inflammation of joints he states that it is superior to rest and antiphlogistics. When properly and continuously practised it promotes absorption and aids circulation. Out of 145 cases treated on this principle all were benefited and he observed that in those cases in which massage was practised early, a cure was rapidly effected.—*Nord. Med. Arkiv.*

CANADA

Medical and Surgical Journal.

MONTREAL, APRIL, 1876.

SANITARY STATISTICS.

In the Canadian House of Commons on the 20th, ultimo, Dr. Brouse, member for Grenville, moved for the appointment of a select Committee to enquire into the expediency of asking legislation with a view to constitute a Bureau of Sanitary Statistics in connection with one of the public departments at Ottawa. In the course of his remarks, Dr. Brouse made statements, some of which he will find are not borne out by facts. In speaking of Montreal, he stated that the mortality of our city was 38 per 1000, "but while admitting that the statistics were not perfect, he was prepared to think that it exceeded 40 per thousand." Leaving aside the annual reports of the death rate of our city, we will take the report of the Census for 1871, where it will be found that Montreal, with a population of 107,225, lost by death during the year 3.096. This yields a little over 28 per thousand of deaths. This we believe is much nearer the truth than the various sensational statements that have been made against the salubrity of our city, and which have apparently been adopted by Dr. Brouse without enquiry. We have on various occasions given this matter a careful investigation, and came to the conclusion years ago, that the city of Montreal had an annual death rate ranging from 32 to 36 per 1000, and that perhaps, outside of all extraneous assistance, the death rate of our city did not exceed 30 per 1000.

It must be stated that we in this city suffer from a plethora of charitable institutions. The citizens are wealthy

and liberal, and we see on all sides rising heavenward the minarets of good substantial Churches, Hospitals, Homes, and Poor Houses—what more natural than that these institutions should attract the sick and destitute of other parts of the country, a certain proportion of whom die and are buried in one or other of our cemeteries. The actual and positive death rate of the City of Montreal is not really attainable, from the defective character of our returns.

Again, Dr. Brouse assumes that out of a population of 4.000,000 in this Dominion, we annually lose by death 120,000 souls, or at an annual death rate of thirty per thousand. This is manifestly incorrect. While the death rate in cities is estimated to be large, the country districts lose comparatively few in proportion to their population.

On referring to the census of 1871 & 72, it will be observed that the entire population of the four provinces of Ontario, Quebec, New Brunswick and Nova Scotia was put down at 3,485.761, and of these there died in 1871, 47,314. We willingly admit that a very large proportion of these deaths was from preventable causes, but we will never arrive at any reliable information on this subject until the entire system of registration is changed. This appears to us, to be the manifest duty of the Federal Government and not of the Local Legislatures. It is not a subject with which the Local Legislatures have anything to do. It is not a municipal matter. If the Federal Government point out to the local authorities, that in certain localities they are losing by death a much larger proportion of their population, than under ordinary circumstances should die, it will then become the duty of the Local Legislatures to seek out the cause and apply the remedy. We have before alluded to the defective nature of our statistical returns of Births Marriages and Deaths. We are aware that in our Province of Quebec, the Roman Catholic Church will oppose secular registration, as that Church looks upon the registration of births as secondary to the ceremony of baptism, and that if it were alone necessary to enregister the births

the Church would lose much of its power over the consciences of its votaries, or at least that their would be some waverers who would comply with the law, but refuse to expose their new-born infants to the rigors of a Canadian winters-day. In the cause of the innocents we believe a general secular registration law would save many lives.

In the course of the debate Mr. Workman observed that the mortality was largely confined to children under three, or certainly under four years of age. Had he substituted weeks or months for years he would have been nearer the truth. On this head what do we learn from the Census. Let us compare the Protestant Province of Ontario with the Roman Catholic Province of Quebec. The entire death rate in Ontario during the year 1871 is put down at 18,063. This in a given population of 1,620,851, of these there died of children under one year 4,435. In the Province of Quebec there was a population of 1,191,516, the entire death rate in that Province was 20,873, and of these there died of children under one year of age 7,133. The custom of taking a new born infant within a few hours after its birth, to a church to be baptised is, to our mind, questionable morality, and without alleging this practice as the cause of this marked difference in infant mortality between these two sections of the country, it may in all justice be regarded as a cause of that marked difference; it calls to mind the very forcible language of Malthus in his article on population, in speaking of infant mortality, he remarks: "The frail tenure by which an infant holds its life will not allow of remitted attention, and the neglect of a child by its mother at the very time when of all others it stands most in need of her care is in the event equivalent to its destruction." Again, we might reasonably expect that the Province of Ontario, with its new settlements, and extended malarial districts would show markedly a higher proportion of deaths than the older settlements in Quebec. These are interesting questions which as sanitarians and political economists, we should be capable of dealing with, but under

the present imperfect system of collecting and tabulating information on these topics it is quite out of our power.

We regret to observe that the feeling on the part of the Government was to shelve the question, but although it may be passed over or voted a bore by the Commons of Canada during the present session, it is a matter which will have to be taken up and gone into with a will some day or other. We think that the Honourable the Premier is laboring under a misconception as to the objects to be attained by Federal Legislation on this subject. The questions of house drainage or ventilation, the purity or otherwise of our water supply would form no part of the inquiry. These manifestly are matters for municipal governments to decide. But what is more especially required is a General Registration Act for the Dominion, in which we think might with advantage be included compulsory vaccination. We trust this subject will not be allowed to drop. Dr. Brouse appears to be in earnest, and he certainly deserves general thanks for moving in the matter, but it does appear that he has moved without any very definite scheme, without in fact knowing what was in reality required. Sanitary science is all very well but sanitary facts will be far more useful, and if the bureau of statistics can with a proper and rigid Registration Act draw year by year a comparison between the mortality of any two places throughout the Dominion of Canada much good will result, and we will then be in a position to seek out the causes of an increased death rate in any particular section of the country with a view to their removal.

ANNUAL CONVOCATION OF McGILL UNIVERSITY.

The Annual Convocation of McGill University was held in the William Molson Hall of the University, on Friday the 31st March 1876, for conferring degrees in Medicine and Surgery. There was a large assemblage of the friends of the University, the Hall being filled with ladies and gentlemen. Shortly after three o'clock, the members of convocation

passed through the hall and ascended the platform, and in the absence of the Chancellor of the University, Peter Redpath, Esq., took the chair.

The meeting was opened with prayer by the Venerable Archdeacon Leach, after which W. C. Baynes, Esq., B.A., Secretary, read the minutes of the last meeting of Convocation.

Professor Scott, M.D., in the absence of the Dean of the Faculty of Medicine, read the following report of that Faculty.

The total number of students enregistered in this Faculty during the past session was 148, of whom there were from :

Ontario	86	New Brunswick	3
Quebec	42	P. E. Island	5
Nova Scotia	4	West Indies	1
		United States	7

The following gentlemen, 21 in number, have passed their primary examinations on the following subjects : Anatomy and Physiology, Chemistry, Materia Medica and Pharmacy, Institutes of Medicine and Botany and Zoology, their names and residences are as follows :

NAME.	RESIDENCE.
Armstrong, George E.	Montreal, Q.
Bell James.	North Gower, O.
Boyle Albert.	Charlottetown, P. E. I.
Brodie John,	North Georgetown, Q.
Burland Samuel C.,	Cambridge, Mass., U.S.A.
Cannon Gilbert.	Almonte, O.
Cameron Duncan H.	Perth, O.
Collison Robert.	Matilda, O.
Cotton Cederic L.	Cowansville, Q.
Faulkner Daniel W.	Hollaway, Ont.
Fortier Alexandre	River David, Q.
Fraser Alexander C.	Wallaceburgh, O.
Gillies John A. F.	Summerside, P. E. I.
Greaves Henry C.	Barbadoes, W. I.
Jamieson Alexander, B.A.,	Lancaster, O.
Lane John A.	Prescott, O.
Law William K.	Richibucto, N.B.
Miner Frank L.	Abercorn, Q.
Oakley William D	Plattsville, O.
Park George A.	St. Marthé, Q.
Smellie Thomas S.D., M.A.	Fergus, O.

The following gentlemen, 34 in number, have fulfilled all the requirements to entitle them to the degree of M.D., C.M., from this University. These exercises consist in examinations both written and oral on the following subjects: Principles and Practice of Surgery, Theory and Practice of Medicine, Obstetrics, and Diseases of Women and Children, Medical Jurisprudence and Hygiene,—and also Clinical Examinations in Medicine and Surgery conducted at the bedside in the Hospital.

The names of the successful candidates, their residences and the subjects of their theses, are as follows :—

NAME.	RESIDENCE.	THESIS.
Baynes Donald, M.A.	Montreal, Q.	Bronchocele.
Campbell James	London, O.	Spasmodic Asthma.
Clarke Fincastle G. B.,	Collingwood, O.	Bloodless Operations.
Colquhoun George	Grenville, O.	Clinical Reports.
Cook Guy R., B.A,	Aultsville, O.	Bronchitis.
Cooke William Henry	Drummondville, Q.	Food.
Coyle Henry W.	Berthier, Q.	Erysipelas.
Craig Thornton	Glengarry, O.	Erysipelas.
Cream Thomas N.	Quebec, Q.	Chloroform.
Crothers William	Clarenceville, Q.	Clinical Reports.
Eberle Henry A.	Morpeth, O.	Pneumonia.
Gray John S.	Heckton, O.	Uterine Hæmorrhage.
Greer Thos. A.	Colborne, O.	Spermatorrhœa.
Hunt Henry.	Notfield, O.	Clinical Notes.
Johnson James B	Weston, O.	Hospital Reports.
Lang Christopher McL.	Owen Sound, O.	Ankylosis.
Levi Reuben.	Montreal, Q.	Lobar Pneumonia.
McIlmoyl Henry A.	Iroquois, O.	Typhoid Fever.
MacDonnell Richard L., B.A.	Montreal, Q.	Medical Cases.
McRae George	Renfrew, O.	Typhoid Fever.
Metcalfe Henry J.	Riceville, O.	Diabetes Mellitus.
Munro Alexander,	Montreal, Q.	Tubercle
Murray Chas. H., B.A.	Montreal, Q.	Hospital Reports.
Powell Robert W.	Ottawa, O.	Surgical Cases.
Reddy Herbert L., B.A.	Montreal, Q.	Hospital Reports.
Ritchie Arthur F., B.A.	Montreal, Q.	Tubular Nephritis.
Robinson Stephen J.	Brantford, O.	Typhoid Fever.
Secord Levi.	Brantford, O.	Pulmonary Emphysema.
Smith William.	Lachute, Q.	Alcohol.
Snider Fred S.	Simcoe, O.	Acute Artic-Rheumatism.
Stevenson Charles N.	Sarnia, O.	Clinical Reports
Storrs Arthur.	Cornwallis, N.S.	Post Part. Hæmorrhage.
Stroud Charles S.	Montreal. Q.	Syphilis.
Young Philip R.	Clarenceville, Q.	Hospital Reports.

Of the abovenamed gentlemen Mr. R. W. Powell is under age, however, passed all the examinations and fulfilled all the requirements necessary for graduation, and only awaits his majority to receive his degree.

The following Gentlemen, 17 in number, passed their examination in Theoretical Chemistry :

A. S. Greenwood,	Milton McCrimmon,	George W. Kirk,
James J. Guerin,	H. H. Gardner,	N. Ayer.
J. D. Cameron,	W. B. Gibson,	D. F. Smith,
F. J. Stafford,	A. P. Chisholm,	J. K. McKinlay,
M. C. Rutherford,	Robert Bell.	M. Bicksted,
J. R. Fraser,	H. N. Vineburg.	

Students who have passed the examination in Botany and Zoology :

BOTANY.

CLASS I.

W. J. Neilson,	J. Smith,	W. H. Garnder,
W. D. Oakley,	W. F. Shaw,	H. C. Feader,
B. F. Butler.	J. B. Lawford,	S. A. McDonald,
D. F. Gurd,	A. W. Imrie,	A. Henderson,
M. C. Baker,	E. McNeil,	A. D. Webster,
J. S. Brown,	J. B. Carman,	
H. Stevenson,	P. E. Carman.	

CLASS II.

J. McCarroll,	F. Hana,	H. B. Burwash,
J. G. Scott,	W. Sutherland,	C. J. Jamieson,
S. McNee.	J. C. McRae,	J. H. Smiley.
T. A. Kidd,	F. H. Mewburn,	M. Seymour,
F. McLennan.	J. M. Wilson,	M. Beckstead.

CLASS III.

W. K. Law,	T. A. Page,	J. A. Mattice,
C. D. Bancroft,	R. C. McDonald,	G. Tate,
J. S. Edwards,	G. W. Olivier,	A. Poops,
S. R Herbert	C. A. Weagant,	M. Karmon,
B. Menzies.	G. C. McCulloch,	W. B. Hall,
E. W. Lettree	J. E. McEvenue,	W. F. Mullen,
W. J. Prendergast,	W. D. M. Bell.	

ZOOLOGY.

CLASS I.

A. Henderson. A. D. Webster.

The Medical Faculty Prizes are three in number:

1st. The Holmes Gold Medal, awarded to the graduate who receives the highest agregate number of marks for the best examinations, written and oral, in both Primary and Final branches as also for an inaugural thesis.

2nd. A prize in books awarded for the best examination, written and oral, in the final branches. The gold medallist is not permitted to compete for this prize.

3rd. A prize in books awarded for the best examination, written and oral, in the primary branches.

The Holmes Gold Medal was awarded to Robert W. Powell of Ottawa, O.

The prize for the final examination was awarded to Charles H. Murray, B.A., Montreal, Q.

Although there are but two regular prizes given to students of the graduating class, a special prize has been awarded by this faculty to Richard L. MacDonnell, B.A., for general proficiency, and especially the excellent character of his inaugural thesis.

The prize for the primary examination was awarded to Alexander C. Fraser, Wallaceburg, O.

The following gentlemen, arranged in the order of merit, deserve honourable mention:—In the final examination, Messrs. MacDonnell, Ritchie, Young, Hunt, Smith, Secord, and Lang.

In the primary examination Messrs. Bell, Cotton, Oakley, Smellie, Jamieson, Miner, and Armstrong.

PROFESSOR'S PRIZES.

PRACTICAL CHEMISTRY. - - - D. F. Smith.

BOTANY—Neilson & Oakley. ZOOLOGY—Henderson.

PRACTICAL ANATOMY.

Demonstrator's prize in the Senior Class, awarded to William Donald Oakley.

Those deserving honourable mention for care and assiduity, Messrs. Greenwood, Vineburg, D. F. Smith, Cameron McGuigan, and Fraser.

Junior Class prize awarded to Wm. J. Neilson. Honourable mention, Messrs. Webster and McCrimmon equal. Lawford, Heard, Shaw and Stevenson equal, McCully.

The graduates were then called forward and the *Sponsio Academica* was administered by Professor Craik, M.D., and each in turn presented to Vice Chancellor Dawson, who performed the ceremony of Capping, and delivered to each candidate his diploma of Doctor of Medicine and Master of Surgery.

At the conclusion of this ceremony Dr. A. F. Ritchie delivered a valedictory address on behalf of his associate Graduates. Dr. Roddick, Professor of Clinical Surgery, then addressed the graduating class on behalf of the Medical Faculty.

After the proeeedings of the Faculty of Law, and an address from Mr. Justice Torrance, the benediction was pronounced by the Rev. Dr. Wilkes, and the convocation adjourned.

Case of Sphacelus of the Thyroid Gland, Recovery of the Patient. By the late GEORGE G. GASGOYEN, F.R.C.S.

At a meeting of the Royal Medical and Churgical Society held February 8th, 1876 the particulars of a case was submitted of idiopathic inflammation of the neck, occurring in a healthy man aged 38 years which was followed by death of the thyroid body and extensive sloughing of the connective tissue of the part. The patient made a rapid recovery and had since suffered no discomfort of any kind from the absence of the gland. The great rarity of such cases was alluded to, various German practitioners had placed on record a few examples of a similar nature. Lebert in his work on "Diseases of the Thyroid gland" refers to several similar cases and gives the particulars of two in which the symptoms and course of the disease were almost identical with the case under discussion. Four of these cases recovered and although the destruction of the gland was complete they did not in any way experience inconvenience rom its loss. This would lead to the supposition that in the adult the thyroid body ceases to possess much functional importance.

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We now prepare the largest variety of remedies from indigenous plants of any concern in the country. These remedies have steadily gained in the confidence of the Profession for the past twenty years, because of their purity, and have become the standard preparations of the country. We call the attention of consumers to the efforts now being put forth to substitute articles or tinctures that are only 25 to 75 per cent. of strength, for the demand which exists for our FLUID EXTRACTS, and which our efforts have created, and desire them to understand that our FLUID EXTRACTS are tested and known to be of the same standard as the drug before being put upon the market, a record of which is kept that we may detect any adulteration, and they can in all cases depend upon that uniformity of strength and action which is so necessary in the use of these remedies.

TWO HUNDRED AND FIFTY KINDS OF FLUID AND SOLID EXTRACTS.

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PILLS, SUGAR-COATED.

Formula for each on the bottle.

One Hundred kinds of Elegant Elixirs. One Hundred kinds of SYRUPS, WINES, &c.

Adapted to the use of Physicians and invalids.

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So much used as the Important Digestive Agent in Indigestions, &c.

PEPSINE IN POWDER; PEPSINE LOZENGES; WINE OF PEPSINE;
ELIXIR PEPSINE AND QUININE; ELIXIR PEPSINE AND BISMUTH;
ELIXIR PEPSINE, STRYCHNIA AND BISMUTH, FERRATED.

SYRUP LACTO-PHOSPHATE OF LIME.

Each fluid dram contains 2 grs. Phosphate of Lime, with an excess of Lactic Acid, so prepared as to afford an agreable preparation.

COMPOUND SYRUP

L cto-Phosph tes of Iron, Lime, Soda, Potassa.

8 grs. Lime, 2 grs. Soda, 2 grs. Potassa, and 4 grs. Iron to each fluid ounce.

Syrup of Phosphates Quinine, Iron and Strychnia and Syr. Lacto-Phosphates of the same.

Each fluid dram contains 1 gr. Phosphate of Iron, 1 gr. Phosphate of Quina, 1-66 gr. Phosphate Strychnia.

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PRICES will be subject to the changes in the Market. We make none but standard preparations, representing a given quantity of crude material, and cannot be expected to conform in price to those articles which represent by positive examination only *one-fourth* or *one-half* strength, or are mere tinctures. We propose to protect the consumer in this respect, and to him our preparations are practically cheaper than any other, because they are of standard known strength, and give better results in administration.

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Jars, Bottles, Labels, Measures, Mortars, Funnels, &c., supplied to order.

Bailey's, Nelson's, and Bullock and Reynold's Inhalers, and Spray Producers, always on hand.

Enema Syringes in great variety.

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DISEASES of the mind and nervous system; Diseases of women; Chronic diseases. Circulars, with references at office of this Journal.

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Trusses, Abdominal Supporters and Belts,
CHEST EXPANDING SHOULDER BRACES,
Suspensory Bandages, Elastic Stockings, Crutches,
&c. &c. &c.

Artificial Limbs !

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Appliances for the relief of Spinal Curvature, Club Feet, Bow Legs, Weak Ankles, diseases of the Hip and Knee Joints, &c., &c.,

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ABSOLUTELY PURE NON-HUMANIZED

VACCINE VIRUS, obtained by the method of True Animal Vaccination, instituted by PROF. DEPAUL OF PARIS, in April, 1866, from the famous case of Spontaneous Cow-pox at Beaugency, in France, and inaugurated in America in Sept., 1870, by

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With Virus and Autograph instruction from the hand of Prof. Depaul. Our establishment is by far the largest and most perfect in the world. Large Ivory "Lancet" points, packages of 10, $2.00. Primary crusts, (scabs), most carefully selected, $5.00.

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TO THE MEDICAL PROFESSION.

A NEW AND IMPORTANT REMEDY.

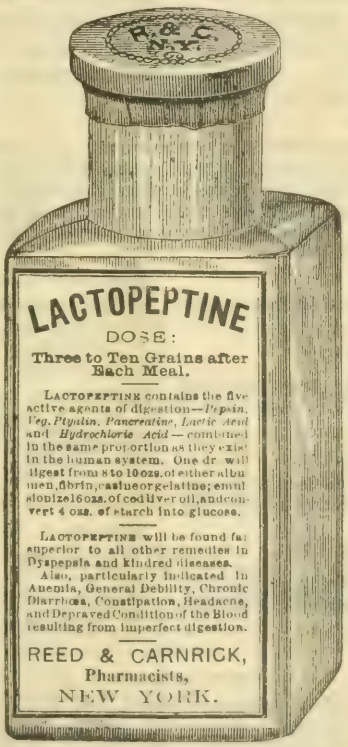
LACTOPEPTINE.

LACTOPEPTINE contains all the agents of digestion that act upon food, from mastication to its conversion into chyle, and is therefore the most important remedy for Dyspepsia that has ever been produced.

The digestive power of LACTOPEPTINE is seven times greater than any preparation of Pepsin in the market, as it has the important advantage of dissolving all aliment used by mankind, while Pepsin acts only upon plastic food.

This preparation has now been in the hands of the Medical Profession for two years, during which time its therapeutic value has been most thoroughly established in cases of **Dyspepsia, Intestinal diseases of Children, Chronic Diarrhœa, Constipation, Vomiting in Pregnancy or Dyspepsia, Headache, and all diseases arising from imperfect nutrition.**

One of the most important applications of **LACTOPEPTINE** *is in those cases where the digestive organs are unable, from debility, to properly prepare for assimilation the remedies indicated. In such cases combine it with the remedy indicated.*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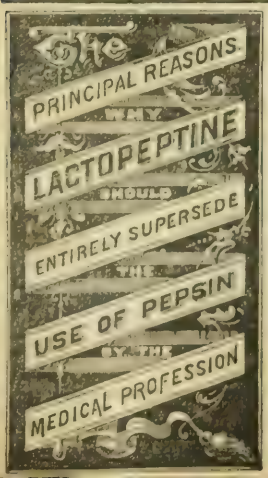
N. Y.
LACTOPEPTINE
DOSE:
Three to Ten Grains after Each Meal.
LACTOPEPTINE contains the five active agents of digestion—*Pepsin, Veg. Pitydin, Pancreatine, Lactic Acid* and *Hydrochloric Acid*—combined in the same proportion as they exist in the human system. One dr will digest from 8 to 10 ozs. of either albumen, fibrin, casine or gelatine; emulsionize 16 ozs. of cod liver oil, and convert 4 ozs. of starch into glucose.
LACTOPEPTINE will be found far superior to all other remedies in Dyspepsia and kindred diseases.
Also, particularly indicated in Anæmia, General Debility, Chronic Diarrhœa, Constipation, Headache, and Depraved Condition of the Blood resulting from imperfect digestion.
REED & CARNRICK,
Pharmacists,
NEW YORK.

LACTOPEPTINE, *as well as all other preparations of our manufacture, is prepared strictly for the use of the Medical Profession, and is kept invariably in their hands.*

FORMULA OF LACTOPEPTINE.

Sugar of Milk,	20 *Ounces.*	*Veg. Pitydin or Diastase,*	1 *Drachm.*
Pepsin,	4 "	*Lactic Acid,*	2½ *f. Drachms.*
Pancreatine,	3 "	*Hydrochloric Acid,*	2½ *f.* "

Powder and Mix.



1st.—It will digest from three to four times more *coagulated albumen* than any preparation of Pepsin in the market.

2d.—It will emulsionize and prepare for assimilation the oily and fatty portions of food, Pepsin having no action upon this important alimentary article.

3d.—It will change the *starchy* portions of vegetable food into the assimilable form of Glucose.

4th.—It contains the natural acids secreted by the stomach (*Lactic and Hydrochloric*), without which Pepsin and Pancreatine will not change the character of coagulated albumen.

5th.—Experiments will readily show that the digestive power of the ingredients of Lactopeptine, when two or more are combined, is much greater than when separated. Thus, 4 grs. of Pepsin and 4 grs. of Pancreatine mixed, will dissolve one third more albumen than the combined digestive power of each agent separately in same length of time.

6th.—IT IS MUCH LESS EXPENSIVE TO PRESCRIBE. It dissolves nearly four times as much coagulated albumen as Pepsin, besides digesting all other food taken by the human stomach. *An ounce of Lactopeptine is, therefore, fully equal in digestive power to seven ounces of Pepsin, yet it is furnished at about the same price.*

One drachm of Lactopeptine dissolved in four fluid drachms of water will emulsionize sixteen ounces of Cod Liver Oil.

CHILLICOTHE, MO., September 4th, 1874.

I have used *LACTOPEPTINE* this summer with good effect in all cases of weak and imperfect digestion, especially in children during the period of dentition, cholera infantum, &c. I regard it, decidedly, as being the best combination containing Pepsin that I have ever used. J. A. MUNK, M. D.

FORT DODGE, IOWA, November 15th, 1874.

I have fairly tried, during the past summer and fall, your *LACTOPEPTINE*, and consider it a most useful addition to the list of practical remedies. I have found it especially valuable in the *gastro-intestinal* diseases of children. W. L. NICHOLSON, M. D.

WHITE HALL, VA., January 4th, 1875.

A short time since I sent for some of your *LACTOPEPTINE*, which I used in the case of a lady who had been suffering with dyspepsia for over twelve months, and who had taken Pepsin, and other remedies usually prescribed in that disease, with very little benefit. I ordered the *LACTOPEPTINE*, and was pleased to find a decided improvement after a few days, which has steadily increased. At the present time she appears to have entire'y recovered. Very truly, E. B. SMOKE, M. D.

INDIANOLA, IOWA, December 11th, 1874.

I consider the *LACTOPEPTINE* a heaven-sent remedy for all digestive troubles. I gave it to a lady troubled with exhaustive nausea and vomiting from pregnancy, with immediate and perfect relief, after all other remedies had failed. She was almost in *articulo mortis*. The third day after taking the *LACTOPEPTINE* she was able to be up. I was called in council the other day to a case of Intussusception; the patient was vomiting stercoracious matter; had retained no nutrition for several days. I gave the *LACTOPEPTINE* with immediate relief. Ingestion was retained. I relieved the bowels by inflation, got an operation, and the patient will recover. I consider the *LACTOPEPTINE* was his *sheet anchor*. I am now using the *LACTOPEPTINE* in Cancer of the Stomach—the only medicine that gives the patient any relief. It seems to act as an anodyne in his case more so than morphine. C. W. DAVIS, M. D.

CONTOCOOK, N. H., November 25th, 1874.

After a thorough trial, I believe *LACTOPEPTINE* to be one of the most important of the new remedies that have been brought to the attention of physicians during the last ten years. I have used it in several cases of vomiting of food from dyspepsia, and in the vomiting from pregnancy, with the best of success. The relief has been immediate in every instance. In some of the worst cases of Cardialgia, heretofore resisting all other treatment, *LACTOPEPTINE* invariably gave immediate relief. It has accomplished more, in my hands, than any other remedy of its class I ever met with, and I believe no physician can safely be without it. It takes the place of Pepsin, is more certain in its results, and is received by patients of all ages without complaint, being a most pleasant remedy. I have used *LACTOPEPTINE* in my own case, having been troubled with feelings of weight in the stomach and distress after eating, but always have obtained immediate relief upon taking the elixir in teaspoonful doses. GEORGE C. BLAISDELL, M. D.

MO. VALLEY, IOWA, November 12th, 1874.

Some months since I saw in a medical journal a notice of your *LACTOPEPTINE*. Having in charge a patient in whose case I thought it was indicated, I prescribed it in 5 gr. doses. He used it about a week and was greatly benefited. I failed to procure more just then, so I gave him Pepsin instead, the patient thinking it to be the same prescription. After two days he returned to my office, saying that "the last medicine didn't hit the spot, but that which you gave me last week was just the thing, and has given me more relief than any medicine I have ever taken." I consider this a fair test (so far as it goes) of the merits of this new, and I think, invaluable remedy. G. W. COIT, M. D.

One drachm of Lactopeptine will transform four ounces of Starch into Glucose.

Pancreatine and Diastase are more important digestive agents than Pepsin.

COMMUNICATIONS FROM MEDICAL JOURNALS.

We have for several months been prescribing various preparations of medicine containing *LACTOPEPTINE* as an important aid to digestion. It may be advantageously combined with cod liver oil, calisaya, iron, bismuth, quinine and strychnia. *LACTOPEPTINE* is composed of pepsin, ptyalin, pancreatine, lactic acid and hydrochloric acid—pepsin, lactic and hydrochloric acids being in the gastric juice, ptyalin in the saliva, and pancreatine emulsionizing fatty substances. The theory of its action being rational, we have prescribed the various preparations referred to above with more evidence of benefit than we ever observed from pepsin.—*St. Louis Medical and Surgical Journal*, September, 1874.

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AN ARTICLE ON LACTOPEPTINE, BY LAURENCE ALEXANDER, M. D., OF YORKVILLE, S. C., IN THE *ATLANTA MEDICAL AND SURGICAL JOURNAL*, NOVEMBER, 1874.

Some time ago a small box, labelled "Physicians' Samples *LACTOPEPTINE*," was placed in my hands, with the request that I would give it a trial upon some one suffering from dyspepsia. Having, like other physicians, a large *per centum* of just such cases always on hand, in which various medicines and remedies had been used without success, I gladly consented, hoping that something had really been found at last to supply the want felt by every practitioner in the treatment of this troublesome complaint. After several months' experience in the use of this preparation, in which it has been thoroughly tested upon a large number of patients with such gratifying results, I am induced to recommend it to the consideration of the profession, feeling confident that, with due care in their diagnosis, and the many little cautions always necessary, such as restricting the excessive use of fluids while eating, etc., and a little patience on the part of the sufferer, its good effects will be seen beyond a doubt.

While I employ it extensively in many deranged conditions of the bowels incident to infancy and childhood, I find it equally efficacious in constipation and all diseases arising from imperfect nutrition in the adult. In sickness of pregnancy it answers well, far exceeding, in my hands, oxalate of cerium, extract lupulin, or the drop doses of carbolic acid, so highly extolled by some practitioners. In its combination with iron, quinine and strychnia, we have the advantage of using, in cases of great nervous depression and debility peculiar to the dyspeptic, our most valuable agent in a truly elegant form.

TO TEST THE DIGESTIVE POWER OF LACTOPEPTINE IN COMPARISON WITH ANY PREPARATION OF PEPSIN IN THE MARKET.

To five fluid ounces of water add one drachm of Lactopeptine, half drachm of Hydrochloric Acid, 10 ounces Coagulated Albumen, allowing it to remain from two to six hours at a temperature of 105 deg., agitating it occasionally.

Lactopeptine is prepared in the form of Powder, Sugar Coated Pills, Elixir, Syrup, Wine and Troches.

LACTOPEPTINE is also combined with the following preparations:

EMULSION OF COD LIVER OIL WITH LACTOPEPTINE.

This combination will be found superior to all other forms of Cod Liver Oil in affections of the Lungs and other wasting diseases. Used in Coughs, Colds, Consumption, Rickets, Constipation, Skin Diseases and Loss of Appetite.

The Oil in this preparation being partly digested before taken, will usually agree with the most debilitated stomach. Although we manufacture seven other preparations of Cod Liver Oil, we would recommend the above as being superior to either of them. It is very pleasant to administer, compared with the plain Oil, and will be readily taken by children.

EMULSION OF COD LIVER OIL WITH LACTOPEPTINE AND LIME.

Each ounce of the Emulsion contains 16 grs. Lactopeptine and 16 grs. Phosphate Lime.

ELIXIR LACTOPEPTINE.

The above preparation is admirably adapted in those cases where Physicians desire to prescribe Lactopeptine in its most elegant form.

REED & CARNRICK manufacture a Full Line of Fluid Extracts.

REED & CARNRICK manufacture a Full Line of Sugar Coated Pills.

BEEF, IRON AND WINE WITH LACTOPEPTINE.

In those debilitated dyspeptic cases when an Iron Tonic, combined with the strengthening properties of Extract of Beef and Wine are indicated, this preparation will be found most efficacious.

ELIXIR PHOSPHATE OF IRON, QUININE AND STRYCHNIA WITH LACTOPEPTINE.

There can be no combination more suitable than the above in cases of Nervous and General Debility, attended with Dyspepsia.

ELIXIR LACTOPEPTINE, STRYCHNIA AND BISMUTH.

A valuable combination in cases of Dyspepsia, attended with nervous debility.

ELIXIR GENTIAN AND CHLORIDE OF IRON WITH LACTOPEPTINE.

An elegant and reliable remedy in cases of Dyspepsia attended with General Debility.

SYRUP LACTOPEPTINE COMP.

Each ounce contains 24 grains Lactopeptine, 8 grains Phosphate of Iron, 8 grains Phosphate Lime, 8 grains Phosphate Soda, and 8 grains Phosphate Potash.

This preparation will be found well suited to cases of General Debility, arising from impaired digestion, and also of great value in Pulmonary Affections.

FORMULÆ.

The following valuable formulæ have been contributed by J. KING MERRITT, M. D., *who has used them with great success in his practice:*

No. 1.—FOR INTERMITTENT FEVER WITH CONGESTION OF LIVER.

℞

Liquid Lactopeptine,		dr. vi.
Fl. Ex. Cinchona Comp.,		dr. i.
Fl. Ex. Taraxacum,		
Tinct. Zingiber,	aa	dr. iii.
Hydrochloric Acid Dilut.,		dr. i.
Spts. Lavender Comp.,		dr. ii.
Sulphate Quinia,		grs. xl.

M. *Dose.*—One teaspoonful every two or three hours.
SIG.—Quinine mixture or tonic mixture.

REMARKS.

This mixture should be taken every two hours in the case of a quotidian attack, as soon after the subsidence of the paroxysms as the stomach will accept it, or even during the sweating stage, if the stomach is not especially irritable, and should be continued until the hour of anticipated paroxysms at the same rate, except during the night, from 10 P. M. to 4 A. M., as a general rule. Six to eight doses to be taken during the first interval, and if the attack does not recur, then continue the mixture daily for one week, at a rate diminished by one hour each day.

No. 2.—FOR INTERMITTENT FEVER WITH IRRITABLE STOMACH.

℞

Liquid Lactopeptine,	dr. vi.
Fl. Ex. Cinchona Comp.,	dr. i.
Tinct. Zingiber,	dr. iii.
Spts. Lavender Comp.,	dr. v.
Aromatic Sulphuric Acid,	dr. i.
Essence Menth. Pip. or Gaultheria,	gtts. x.
Sulphate Quinia,	grs. xl.

M. *Dose.*—One teaspoonful with water *ad libitum* every two or three hours, as in Formula No. 1, and in accordance with the type of the attack. Begin at the rate indicated;

Private Formulas of Pills or other Preparations made to order.

that is, if "Tertian," every three hours, and then after first interval, if the paroxysm does not recur, continue mixture at a diminished rate each succeeding day, as indicated in remarks appended to Formula No. 1, to wit, by increasing the period of time between each dose of medicine an hour every day until a week has passed, when the frequency of dose will be reduced to three times a day, at which rate it should be continued until complete restoration of appetite and strength.

No. 3.—FOR MALARIAL DYSPEPSIA.

℞

Liquid Lactopeptine,		dr. fl. vi.
Fl. Ex. Cinchona Comp.,		
Tinc. Nux Vomica,	aa	dr. xi.
Spts. Lavender Comp.,		oz. ss.
Hydrocyanic Acid Dilut.,		dr. ss.
Syr. Aromatic Rhubarb,		oz. ss.
Sulphate Quinine,		dr. ss.

M. *Dose.*—One teaspoonful with water *ad libitum* at meals (before or after), and *at bed time if required;* also, use in addition after the meals full doses of Pulv. Lactopeptine with Spts. Lavender Comp. and Lime Water, *in case the patient should suffer from positive signs of indigestion, although the dose of Formula No. 3 has already been taken at the meal time,* either immediately before or after eating, in accordance with the rule or foregoing instruction.

No. 4.—FOR CHRONIC DIARRHŒA.

℞

Liquid Lactopeptine,	dr. vi.
Liq. Opii Comp. (Squibbs'),	dr. iii.
Nitric Acid Dilut.; or, Aqua Regia Dilut.,	dr. i.
Syr. Aromatic Rhubarb,	dr. ii.
Pulv. Nit. Bismuth,	dr. ss.
Aqua Camph.,	oz. ss.

M. *Dose.*—One teaspoonful with water after each flux from bowels, and as a rule, at bed time, even if the diarrhœa is apparently checked at that hour, and *this rule* should be *persisted in* for two or three days, or until the diarrhœal tendency has been entirely subdued.

PEPSIN—PANCREATINE—DIASTASE.

In addition to *LACTOPEPTINE* we manufacture PEPSIN, PANCREATINE and DIASTASE. They are put up separately in one ounce and pound bottles.

They will be found equal in strength with any other manufacture in the world.

They are all presented in a saccharated form, and are therefore very palatable to administer.

COMP. CATHARTIC ELIXIR.

The only pleasant and reliable Cathartic in liquid form that can be prescribed.

Each fl. oz. contains:

Sulph. Magnesia,	1 dr.
Senna,	2 "
Scammony,	6 grs.
Liquorice,	1 dr.
Ginger,	3 grs.
Coriander,	5 "

With flavoring ingredients.

Dose.—Child five years old, one to two teaspoonfuls; adult, one to two tablespoonfuls.

This preparation is being used extensively throughout the country. It was originated with the design of furnishing a liquid Cathartic remedy that could be prescribed in a palatable form. It will be taken by children with a relish.

MAINE INSANE HOSPITAL, AUGUSTA, Feb. 25th, 1875.

I am happy to say that we are much pleased with the Compound Cathartic Elixir. It has, so far, proved the best Liquid Cathartic we have ever used in our Institution. It acts effectively and kindly, without irritation or pain. H. M. HARLOW, M. D.

Private Formulas of Pills or other preparations made to order.

Strychnia Compound Pill.

Strychnia,	1-100 grain.
Phosphorus,	1-100 "
Ex. Cannabis Indica,	1-16 "
Ginseng,	1 "
Carb. Iron,	1 "

Dose.—One to two.

A reliable and efficient Pill in Anaphrodisia, Paralysis, Neuralgia, Loss of Memory, Phthisis, and all affections of the Brain resulting from Loss of Nerve Power.

Price, 80 cents per hundred.

Sent by mail, prepaid, on receipt of price.

Hæma, Quinia and Iron Pill.

Ext. Blood,	**2 grains.**
Quinine Sulph.,	**1 grain.**
Sesqui Oxide Iron,	**1 "**

Dose.—One to three.

Price, $2.00 per hundred.

Sent by mail, prepaid, on receipt of price.

HÆMA PILLS.

We beg to present to the Medical Profession for their special consideration our several preparations of Blood Pills. The use of Blood medicinally, and the importance of its administration in a large class of diseases, has arrested the attention of many of the leading Physicians of Europe, and has received their warmest attestation. Prominent among these may be mentioned Prof. Panum, of the University of Copenhagen, who is using it with great success in the hospital of that city.

At the abattoir in this city, Boston, and in every part of the country, there can be seen numerous persons afflicted with Pulmonary Affections, Chlorosis, Paralysis, Anemia, and other ailments, who are daily drinking the blood of the ox, and many with more benefit than they have derived from any other source.

The blood used by us being *Arterialized Male Bovine only*, is secured as it flows from the animal in a vacuum pan, and the watery portion (85 per cent.), eliminated at a temperature not exceeding 100° F., the remaining mass, containing every constituent of the blood, being the base of our preparations.

HÆMA (Ext. Blood), 4 grs.

Dose.—Two to four.

90 cts. per hundred.

HÆMA COMP.
Ext. Blood, 2 grs.
Lacto-Phosphate Lime, 1 gr.
Pepsin, 2 gr.
Dose.—One to three.
$1.50 per hundred.

HÆMA, QUINIA, IRON AND STRYCHNIA,
Ext. Blood, 2 grs.
Quinine Sulph., 1 gr.
Sesqui Oxide Iron, 1 gr.
Strychnine, 1-75 gr.
Dose.—One to three.
$2.00 per hundred.

Samples sent to Physicians, postage prepaid, on receipt of price.

LACTOPEPTINE and most of our leading preparations can be obtained from the principal Druggists of the United States.

SUGAR COATED PILLS, TROCHES AND POWDERS CAN BE SECURELY SENT BY MAIL.

Price of LACTOPEPTINE by Mail.

One ounce sent by mail, prepaid, on receipt of	$1 00
One pound " " " " "	13 00

A fraction of an ounce or pound sent by mail on receipt of corresponding price.

We guarantee all goods of our manufacture.

In ordering, please designate R. & C.'s manufacture.

Send for PRICE LIST, DOSE BOOKS and DISCOUNTS.

Oct. 15th, 1875. Respectfully,

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Morson's Pancreatine Powder.
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Morson's Creasote (from Wood Tar) the only English makers.
N.B.—Test of purity, insoluble in Price's glycerine.
Morson's Gelatine (The most economical substitute for Isinglass.)
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Morson's Effervescing Citrate of Magnesia.
Morson's Artificial Essences for flavoring.

Sold Wholesale and Retail by all Chemists and Druggists throughou the World.

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Absolute Security — Non-Forfeitable Policies — Moderate Rates — Prompt Settlement of Claims.

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Manager for Canada.

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LIFE ASSURANCE COMPANY.

ESTABLISHED 1847.

CASH INCOME OVER $1.000 PER DAY.

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Affording with the uncalled capital, $875,000.

A SECURITY of Over $2,000,000

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CASH PAID FOR DEATHS SINCE COMMENCEMENT	$800,000
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The strong Financial position of this Company, and its MODERATE RATES render it one whose advantages are not surpassed by any other, and explain the fact that it STANDS AT THE HEAD of all the Life Companies in Canada.

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